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**BEFORE THE ARIZONA POWER PLANT
AND TRANSMISSION LINE SITING COMMITTEE**
**NOTICE OF FILING OF DIRECT TESTIMONY AND EXHIBITS
OF TUCSON ELECTRIC POWER COMPANY**

Docket. No.
L-00000C-20-0007-00186

Arizona Corporation Commission

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**BEFORE THE ARIZONA POWER PLANT
AND TRANSMISSION LINE SITING COMMITTEE**

In the matter of the Application of Tucson Electric Power Company, in conformance with the requirements of A.R.S. § 40-360, et seq., for a Certificate of Environmental Compatibility authorizing the Irvington to East Loop 138 kilovolt (kV) Transmission Line Project, which includes the construction of new 138 kV transmission lines originating at the Irvington Substation (Section 03, Township 15 South, Range 14 East), with an interconnection at the Port Substation (Section 18, Township 15 South, Range 15 East) and the Patriot Substation (Section 31, Township 14 South, Range 15 East), and terminating at the East Loop Substation (Section 08, Township 14 South, Range 15 East), each located within Pima County, Arizona.

DOCKET NO. L-00000C-20-0007-00186

CASE NO. 186

**NOTICE OF FILING
PRE-FILED DIRECT TESTIMONY
AND EXHIBITS**

Pursuant to Paragraphs 3, 13, 14, and 19 of Chairman Chenal's January 23, 2020 Procedural Order (the "Procedural Order"), Tucson Electric Power Company ("TEP" or "Applicant"), through undersigned counsel, hereby provides the following written direct testimony and other exhibits:

EXHIBIT NO.	
TEP-1	Application for Certificate of Environmental Compatibility [filed January 15, 2020]
TEP-2	Ed Beck's Pre-filed Direct Testimony
TEP-3	Eric Raatz's Pre-filed Direct Testimony
TEP-4	Renee Darling's Pre-filed Direct Testimony
TEP-5	Hearing Power Point Presentation
TEP-6	Proposed Route Tour Schedule and Map
TEP-7	Affidavits of Publication and Tear Sheets
TEP-8	Proof of Posting
TEP-8A	Hearing Notice Sign Location Map
TEP-8B	Hearing Notice Photographs
TEP-9	Proof of Service to Affected Jurisdictions

TEP-10	Post card mailed on February 4, 2020
TEP-11	Applicant's Proposed Form of CEC
TEP-12	Updated Application Exhibit G-5, Page 179
TEP-13	Updated Application Exhibit I, Page 232
TEP-14	Updated Application Exhibit I-2, Page 235
TEP-15	Letter from Michael M. Grant to Carol Peters of Arizona Electric Power Cooperative, dated May 10, 1994

Pursuant to Paragraph 20 of the Procedural Order, Applicant identified the following witness panel and witnesses it intends to present at the hearing:

WITNESS PANEL
Edmond Beck
Eric Raatz
Renee Darling

RESPECTFULLY SUBMITTED this 18th day of February, 2020.

TUCSON ELECTRIC POWER COMPANY

By *J. Matthew Derstine* for

J. Matthew Derstine
Snell & Wilmer L.L.P.
One Arizona Center
400 East Van Buren Street
Phoenix, Arizona 85004

and

Megan J. DeCorse
Tucson Electric Power Company
88 East Broadway, MS HQE910
P.O.Box 711
Tucson, Arizona 85702
Attorneys for Tucson Electric Power Company

1 Original and 25 copies of the foregoing
2 filed this 18th day of February, 2020, with:

3 Docket Control
4 Arizona Corporation Commission
5 1200 West Washington Street
6 Phoenix, Arizona 85007

7 Copies of the foregoing hand-delivered/mailed
8 this 18th day of February, 2020, to:

9 Thomas K. Chenal, Chairman
10 Arizona Power Plant and Transmission Line Siting Committee
11 Arizona Attorney General Office
12 15 South 15th Avenue
13 Phoenix, Arizona 85007

14 Robin Mitchell, Director
15 Legal Division
16 Arizona Corporation Commission
17 1200 West Washington Street
18 Phoenix, Arizona 85007

19 Stephen Emedi,
20 Legal Division
21 Arizona Corporation Commission
22 1200 West Washington Street
23 Phoenix, Arizona 85007

24 Elijah Abinah, Director
25 Utilities Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

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EXHIBIT TEP-1

Application for Certificate of Environmental Compatibility

[filed January 15, 2020]

EXHIBIT TEP-1
Application for Certificate of Environmental Compatibility

Previously filed with the Arizona Corporation Commission on January 15, 2020.

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EXHIBIT TEP-2

Ed Beck's Pre-filed Direct Testimony

1 **BEFORE THE ARIZONA POWER PLANT**
2 **AND TRANSMISSION LINE SITING COMMITTEE**

3
4 In the matter of the Application of Tucson Electric
5 Power Company, in conformance with the
6 requirements of A.R.S. § 40-360, *et. seq.*, for a
7 Certificate of Environmental Compatibility
8 authorizing the Irvington to East Loop 138 kilovolt
9 (kV) Transmission Line Project, which includes
10 the construction of new 138 kV transmission lines
11 originating at the Irvington Substation (Section 03,
12 Township 15 South, Range 14 East), with an
13 interconnection at the Port Substation (Section 18,
14 Township 15 South, Range 15 East) and the Patriot
15 Substation (Section 31, Township 14 South, Range
16 15 East), and terminating at the East Loop
17 Substation (Section 08, Township 14 South, Range
18 15 East), each located within Pima County,
19 Arizona.

DOCKET NO. L-00000C-20-0007-00186

CASE NO. 186

20 **DIRECT TESTIMONY AND EXHIBITS**
21 **OF EDMOND BECK**
22 **ON BEHALF OF**
23 **TUCSON ELECTRIC POWER COMPANY**
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1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Edmond Beck. My business address is 88 East Broadway Blvd., Tucson, Arizona
4 85701.

6 **Q. What is your position with Tucson Electric Power Company ("TEP" or the "Company")?**

7 A. I am employed by Tucson Electric Power Company ("TEP"), a wholly-owned subsidiary of
8 UNS Energy Corporation ("UNS Energy"). I am the Director of Transmission Development
9 for all the regulated subsidiaries of UNS Energy, including TEP, UNS Electric, Inc. ("UNSE")
10 and UNS Gas, Inc. One of my responsibilities is siting of projects for the companies'
11 transmission facilities, including new facilities and additions/modifications/upgrades to existing
12 facilities.

14 **Q. Please briefly describe your background and work experience.**

15 A. I received a Bachelor of Science degree in Civil Engineering and a Master's Degree in Business
16 Administration from the University of Arizona. I am a Registered Professional Engineer in the
17 State of Arizona and a member of the American Society of Civil Engineers. In addition, I have
18 served on various task forces and committee assignments related to transmission in the region.

19
20 I have worked in the electric utility industry for over forty years. Before assuming my present
21 position, I was the Director of Project and Land Management for TEP and UNSE. In that
22 capacity, I was responsible for engineering project management for capital projects as well as
23 all land-related activities for the Company. Before that, I was the Director of Project
24 Management and Transmission Administration for TEP and UNSE and was responsible for
25 engineering project management as well as the administration of our Open Access Tariff,
26 including the sale of transmission capacity across our system and contracts related to
27 transmission. Before that, I was Manager of Line Siting Services for TEP and UNSE. In that

1 capacity, I was responsible for all aspects of siting projects for both companies. Prior to that I
2 was Superintendent of Planning and Contracts for TEP. In that capacity, I was responsible for
3 TEP's transmission and distribution system planning, and transmission system contracts
4 including justification and timing for new facilities such as 138 kV substations, high voltage
5 ("HV") and extra-high voltage ("EHV") transmission lines and distribution lines.

6
7 I have experience as a project engineer and project manager for transmission line and substation
8 design projects, as a contract negotiator in contracts and wholesale marketing, as a contract
9 negotiator in system operations for the implementation of the Federal Energy Regulatory
10 Commission's ("FERC") Open Access Same-time Information Systems ("OASIS")
11 requirements, and as supervisor of resource planning. In connection with these assignments, I
12 have designed and managed the construction of many 138 kV, 345 kV and 500 kV transmission
13 projects. I have also negotiated agreements regarding TEP's Open Access Transmission Tariff
14 ("OATT"), as well as settlement negotiations of TEP's FERC rates. I was TEP's lead negotiator
15 in the creation of the Southwest Reserve Sharing Group ("SRSG") and in a turnkey proposal
16 for peaking resources and ultimately in contract development for a TEP peaking resource
17 project. I continue to be TEP's representative on the Arizona Independent System Administrator
18 ("AISA") (including being a member of AISA's board).

19
20 **Q. Have you previously testified in Arizona transmission-related regulatory proceedings?**

21 **A.** Yes. I have testified before the Arizona Power Plant and Transmission Line Siting Committee
22 ("Committee") and the Arizona Corporation Commission ("Commission") on behalf of both
23 TEP and UNSE on multiple transmission projects including:

- 24 • TEP's proposed 345 kV/115 kV Gateway Project (Case 111);
- 25 • A joint application with Southwest Transmission Cooperative, Inc. ("SWTC") for the
26 Winchester Project (Case 121);

- TEP's modification and amendment to an existing CEC for a second 500 kV transmission line between the Saguaro and Tortolita Substations (Case 39);
- TEP's Vail 138 kV Project including the Cienega Substation (Case 137);
- The UNSE Vail to Valencia 115 kV to 138 kV Project (Case 144);
- TEP's joint application with SWTC (subsequently transferred SWTC rights to TEP) for the Saguaro to North Loop Project (Case 149);
- TEP's DeMoss Petrie to Tucson 138 kV Project (Case 157);
- TEP's Toro to Rosemont 138 kV Project (Case 164);
- TEP's Pinal Central to Tortolita 500 kV Project (Case 165);
- The Southline Transmission Project (Case 173);
- The Nogales Interconnection Project and the UNSE Nogales Tap to Kantor Upgrade Project (Case 176);
- TEP's Reciprocating Internal Combustion Engine Generation Project and the Irvington 138 kV Transmission Line relocation Project, including the installation of ten (10) modular approximately 20 MW reciprocating internal combustion engine generators and construction of approximately 2.2 miles of new 138 kV transmission lines, (Case 177)
- TEP's Irvington to Kino 138 kV Transmission Line Project, which included the construction of a new 138 kV transmission line and associated facilities originating at the Irvington Substation, (Case 178); and
- TEP's Sonoran Substation to Wilmot Energy Center 138 kV Transmission Line Project including the construction of new 138 kV transmission lines and associated facilities originating at the Sonoran Substation (Case 181).

I have also represented TEP before the Commission regarding its ten-year plan filings and in summer preparedness workshops. I have also testified in an arbitration case between TEP and Public Service Company of New Mexico involving the TEP transmission system.

1 **Q. Please explain your role in the Irvington to East Loop 138 kV Transmission Line Project**
2 **(“Project”).**

3 A. I have supervised TEP’s preparation of this Application and attached exhibits as well as
4 participated in our outreach to the public as well as with Davis Monthan Air Force Base
5 (“DMAFB”).
6

7 **Q. What is the purpose of your testimony?**

8 A. I provide an overview of the Project. I also present testimony in support of TEP’s long standing
9 position regarding Siting Committee / Commission jurisdiction over switchyards.
10

11 **Q. What exhibits do you sponsor?**

12 A. In addition to my Direct Testimony, I sponsor and/or co-sponsor the following exhibits:
13 • Exhibit TEP-1 – Application for a Certificate of Environmental Compatibility [filed
14 January 15, 2020];
15 • Exhibit TEP-5 – Hearing Power Point Presentation; and
16 • Exhibit TEP-15 – Letter from Michael M. Grant to Carol Peters of Arizona Electric
17 Power Cooperative, dated May 10, 1994.
18

19 **II. OVERVIEW**

20 **Q. What describe the purpose and need of the Project.**

21 A. The purpose of the Project is to expand TEP’s 138 kV transmission system to expand 138
22 coverage in the area of DMAFB as well surrounding neighborhoods. Mr. Raatz will cover
23 additional details of the value of the Project. The line from Irvington to East Loop and 138 kV
24 line was first identified in a load saturation study conducted by TEP in 2007. The study looked
25 at the existing and planned zoning for the TEP service territory and based upon this zoning,
26 estimated future load growth. Based upon the forecasted load growth as determined by the load
27

1 saturation study, it was determined that a new 138kV line was required to alleviate loading
2 the existing 46 kV sub-transmission and 138 kV transmission system.

3
4 The decision to move forward with the project was driven by the needs of DMAFB to meet a
5 new DOD mandate regarding energy resiliency.

6
7 **III. SUBSTATION VERSUS SWITCHYARD**

8 **Q. One of the issues that has been raised in recent siting cases is whether substations are**
9 **included in the definition of a transmission line under the siting statute. What is TEP's**
10 **position on including substations for approval as part of a CEC application?**

11 A. TEP's long-standing position has been to include information regarding substations but not
12 request approval of them.

13
14 **Q. Can you provide background on why TEP has taken this position?**

15 A The statute specifically uses the term switchyard in the definition of transmission line. I believe
16 this was a deliberate use of the term switchyard. Switchyards are required to interconnect
17 transmission lines whereas substations are typically used for load serving purposes. My view is
18 that the purpose of the statute is to govern the siting of transmission lines but there was also a
19 recognition that the connecting points for these lines should be included.

20
21 **Q. Do you have any authority that supports your position?**

22 A. Yes, I had a conversation with Gary Grimm of Arizona Electric Power Cooperative, Inc.
23 ("AEPCO") regarding the issue of whether substations are included in the transmission line
24 definition. Mr. Grimm related to me his understanding of the siting of switchyards versus
25 substations. Mr. Grimm shared with me a letter from their outside attorney Mr. Michael Grant
26 in 1994. Mr. Grant was advising AEPCO regarding whether there was a need to site a
27 substation. In his letter, Mr. Grant stated that "a substation is not a switchyard, as that term is

1 used in A.R.S. § 40-360(9)¹.” In support of his position, Mr. Grant stated that he had discussed
2 his conclusion with Mr. Tom Parish, who at the time was an attorney for Arizona Public Service
3 Company. Mr. Grant related “Mr. Parish was involved in the drafting and passage of the
4 Committee statutes some twenty years ago” and Mr. Parish agreed that “*the term ‘switchyard’*
5 *was specifically chosen at that time so as not to include substation construction in Committee*
6 *jurisdiction.*”

7
8 **Q. Is the distinction between switchyard and substation important to TEP?**

9 A. Yes. TEP is subject to the permitting requirements of local jurisdictions within its service
10 territory. Each of these jurisdictions have specific processes within their codes requiring
11 approval of “substations”. For example, in Pima County, TEP is subject to the Pima County
12 Zoning Code, Chapter 18.07 and within the City, TEP is subject to the Tucson Unified
13 Development Code, Chapter 23B, Article 4. Both of these local ordinances address substations
14 but not switchyards. This is consistent with TEP’s position that the Committee has authority
15 over switchyards while local jurisdictions do not as opposed to substations where local
16 jurisdictions control and the Committee does not.

17
18 **VII. CONCLUSION**

19 **Q. Please summarize your testimony.**

20 A. The Project is necessary to meet TEP’s load serving obligations, to improve reliability in the
21 vicinity of DMAFB and meet DOD resiliency goals. I also wanted to make a record of TEP’s
22 position on the Committee’s authority over switchyards and not substations. TEP requests
23 approval of the Project as put forth in the Application.

24 **Q. Does this conclude your testimony.**

25 A. Yes.

26 _____
27 ¹ In 2001, the statute numbering changed. Today’s reference would be § 40-360(10).

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EXHIBIT TEP-3

Eric Raatz's Pre-filed Direct Testimony

1 **BEFORE THE ARIZONA POWER PLANT**
2 **AND TRANSMISSION LINE SITING COMMITTEE**

3 In the matter of the Application of Tucson Electric
4 Power Company, in conformance with the
5 requirements of A.R.S. § 40-360, *et seq.*, for a
6 Certificate of Environmental Compatibility
7 authorizing the Irvington to East Loop 138 kilovolt
8 (kV) Transmission Line Project, which includes the
9 construction of new 138-kV transmission lines
10 originating at the Irvington Substation (Section 03,
11 Township 15 South, Range 14 East), with an
12 interconnection at the Port Substation (Section 18,
13 Township 15 South, Range 15 East) and the Patriot
14 Substation (Section 31, Township 14 South, Range
15 15 East), and terminating at the East Loop
16 Substation (Section 08, Township 14 South, Range
17 15 East), each located within Pima County,
18 Arizona.

DOCKET NO. L-00000C-20-0007-00186

CASE NO. 186

19 **DIRECT TESTIMONY AND EXHIBITS**

20 **OF ERIC RAATZ**

21 **ON BEHALF OF**

22 **TUCSON ELECTRIC POWER COMPANY**

1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Eric Raatz. My business address is 3950 E. Irvington Rd., Tucson, Arizona 85714.

5 **Q. What is your position with Tucson Electric Power Company (“TEP” or the “Applicant”)?**

6 A. I am employed by TEP as the Manager of Operations Planning. In this capacity, I am
7 responsible for the oversight of the Operations Planning Department for both TEP and UNS
8 Electric, Inc. (collectively “Companies”). In addition to the oversight of the Operations Planning
9 Department, one of my responsibilities includes siting of projects for the Companies’
10 transmission and generation facilities as required by A.R.S. §§ 40-360.03, including new
11 facilities and additions/modifications/upgrades to existing facilities.

13 **Q. Please briefly describe your background and work experience.**

14 A. I earned a Bachelor of Science degree in Civil Engineering from the University of Arizona in
15 2000. I am a Registered Professional Engineer in the State of Arizona. In addition, I have
16 served on various task forces and committee assignments related to transmission and operations
17 planning within the region.

18
19 I was a Civil Consulting Engineer from 2001 to 2008. In this capacity, I was responsible for all
20 facets related to civil engineering in the development of residential and commercial
21 development. I was hired by TEP in 2008 into the Civil Transmission Engineering group as a
22 Civil Transmission Engineer IV. After 5 years in this role, I moved into the Transmission
23 Planning Engineering Department as a Transmission Planning Engineer IV. I was promoted to
24 a Senior Transmission Planning Engineer position after working within the group for 3 years. I
25 was promoted to Manager of Operations Planning in 2019.

1 **Q. Have you previously testified in transmission-related regulatory proceedings?**

2 A. Yes. I have testified before the Arizona Power Plant and Transmission Line Siting Committee
3 (the “Committee”) on behalf of TEP for the Sonoran Substation to Wilmot Energy Center 138
4 kV Transmission Line project (Case 181).

5
6 **Q. Please explain your role in the Irvington to East Loop 138 kV Transmission line Project (“Project”).**
7

8 A. I participated in the planning process and development of the Project as well as the preparation
9 of the Application, specifically as it relates to the design and technical aspects of the Project. I
10 oversaw the portions of the design of the Project as well as the electric and magnetic fields
11 (“EMF”) study. I also oversaw portions of Exhibits G and I, and participated in public and
12 stakeholder meetings.

13
14 **Q. What is the purpose of your direct testimony?**

15 A. I provide an overview of the Project, including its purpose and need, preferred and alternative
16 routes, associated costs, and the proposed tour schedule for the Project. I describe the technical
17 components of the Project and speak to how this project will affect the existing 138 and 46 kV
18 system depending upon what route is selected. I also sponsor a Google Earth Flyover
19 representation of the Project.

20
21 **Q. What exhibits do you sponsor?**

22 A. In addition to my Direct Testimony and Hearing Power Point Presentation, I sponsor and/or
23 co-sponsor the following exhibits:

- 24 • Exhibit TEP-1 – Application for Certificate of Environmental Compatibility [filed
25 January 15, 2020];

- Exhibit TEP-5 – Hearing Power Point Presentation;
- Exhibit TEP-6 – Proposed Route Tour Schedule and Map;
- Exhibit TEP-7 – Affidavits of Publication and Tear Sheets;
- Exhibit TEP-9 – Proof of Service to Affected Jurisdictions;
- Exhibit TEP-11 – Applicant’s Proposed Form of CEC;
- Exhibit TEP-12 – Updated Application Exhibit G-5, Page 179;
- Exhibit TEP-13 – Updated Application Exhibit I, Page 232; and
- Exhibit TEP-14 – Updated Application Exhibit I-2, Page 235.

Q. Are there any changes that you would like made to the Application?

A. Yes. There are three changes to the Application: (i) Exhibit G, Key Observation Point #1, page 179 has been revised to show the correct framing of the structures [see Exhibit TEP-12]; (ii) Exhibit I, Page I-6, Page 232 the reference to the EMF study has been corrected to reflect the correct study; and (iii) Exhibit I, Page I-2. The reference to “Figure I-22” on the first page of the EMF Analysis, on page 235 in Exhibit I, should be changed to “I-2.”

Q. Please describe the Project.

A. The Project will consist of a new, 138 kV transmission line that will connect between the existing 138 kV Irvington breaker-and-a-half substation with interconnections at the future 138 kV Port and planned Patriot substations. The line will terminate at the existing 138 kV East Loop substation. The total length of the Project ranges between 11 to 13 miles, depending upon the route approved. The total number of structures used for the Project will be approximately 110 to 123.

///

TEP will present three (3) alternative routes for the Project. The portion of the Project from Irvington Substation to Patriot Substation has a route common to all three alternatives. Given the constraints in this area of the Project, such as Davis Monthan Air Force Base (“DMAFB”), the Union Pacific Railroad (“UPRR”), and residential development, alternatives for the southern portion of the Project were limited. Through the route analysis and stakeholder outreach process, several alternatives were narrowed down to two alternatives presented to the stakeholders. Further analysis and stakeholder outreach eliminated one of the routes from consideration.

All structures for the Project will be designed as double circuit capable. For the first one (1) mile out of the Irvington substation, the Project will be constructed, with one (1) circuit energized at 46 kV and the other at 138 kV. The 46 kV circuit in this area is needed for a new solar yard, which will be located approximately 1 mile southeast of the existing Irvington Substation, just west where Valencia Rd. crosses the UPRR. Depending upon the route approved, the Project may utilize existing transmission corridors, or entirely new corridors. In the areas where the route alternative uses existing transmission corridors, the existing transmission lines that are in place would be temporarily de-energized, and transferred onto the newly erected structures as part of this Project. The old structures would then be removed. Those portions of the Project will be constructed and energized as either 46 /138 kV double circuit or 138 kV double circuit transmission lines.

All structures used in the Project will be self-weathering steel monopoles. The transmission line will utilize a non-specular, 954 ACSS-HS (aluminum composite, steel supported high strength) rail conductor designed for a maximum continuous operating temperature of 200°C and an emergency operating temperature of 250°C. Clearances to the conductor are designed using the

1 emergency operating temperature and are in accordance with the most recent version of t
2 National Electric Safety Code (“NESC”).

3
4 The Project will cross private, City of Tucson (“COT”), Pima County, Arizona State, and
5 Department of Defense (“DOD”) owned land as well as COT and Pima County road rights-of-
6 way. The Project will result in no adverse impacts on factors to be considered by the Committee.

7
8 **Q. Will this Project interconnect with any existing TEP facilities?**

9 A. Yes, the Project will be connecting to existing TEP Irvington 138 kV Substation located at
10 TEP’s Irvington Campus and will be terminating at the existing East Loop 138 kV Substation
11 located just southeast of the intersection of Speedway Blvd. and Kolb Rd.

12
13 **Q. Please describe the purpose and need of the Project.**

14 A. The purpose of the Project is to provide increased transmission capacity throughout the existing
15 transmission system, improve reliability, enable and enhance TEP’s ability to respond to future
16 load growth. The Project will also provide contingency support to exiting distribution
17 substations, assist DMAFB in fulfilling the DOD directive for enhancing energy resiliency and
18 over time, allow for retirement of part of the existing aging 46 kV sub-transmission system
19 currently serving the area.

20
21 The Port of Tucson, a full service inland port, rail yard and intermodal facility is located at the
22 southern end of the Project. The facility is located adjacent to the UPRR Mainline and Interstate
23 10, linking California and Texas. Given the location of the Port of Tucson with respect to the
24 proposed transmission line, the Project will enable TEP to respond to future service requests in
25 a more timely fashion, thus potentially enhancing the economics of the Tucson community.

1 The Project has been included in annual Transmission Planning studies beginning in 2019. With
2 the addition of this Project, several uprate projects that were previously identified in planning
3 studies have been deferred due to the additional capacity this Project will provide.
4

5 **Q. Has TEP proposed a tour schedule for the project, should the committee decide to take a**
6 **field tour?**

7 A. Yes. Attached to my testimony as Exhibit TEP-6, is the proposed itinerary for the field tour for
8 the Committee to review and consider. The itinerary is designed to have stops at key
9 observation points for each of the proposed routes. I would be the witness available to respond
10 to specific questions regarding the Project. We believe the route tour would take approximately
11 3 hour(s), taking into account traffic on the streets and roadways we would be traveling.
12

13 **Q. Please describe the stops on the proposed route and tour schedule.**

14 A. As noted in Exhibit TEP-6, the tour will begin at the DoubleTree Hotel, 445 South Alvernon
15 Way, Tucson, AZ 85711, on February 25, 2020 at 9:00 A.M. Thereafter, we will depart for the
16 following points of interest:

- 17 • Point of Interest #1 – East Loop Substation
- 18 • Point of Interest #2 – Northwest corner Pantano Rd. and 22nd St. (strip mall parking lot)
- 19 • Point of Interest #3 – West side of S. Pantano Rd. (pull to the side of the road)
- 20 • Point of Interest #4 – Northwest corner of Carson Ave. and Escalante Rd. (pull to the side
- 21 of the road)
- 22 • Point of Interest #5 – Northeast corner of Kolb and Escalante Rds. (gas station parking lot)
- 23 • Point of Interest #6 – Intersection of Wilmot and Littleton Rds. (dirt lot across street of
- 24 intersection)
- 25

1 **Q. Please describe the virtual tour that you will provide.**

2 A. The virtual tour is a representation of an aerial flyover of the project alternatives delineating the
3 location of the new facilities that are included in the project description. The virtual tour was
4 developed by TEP. The virtual tour uses the Google Earth Professional platform that allows the
5 insertion of model representation of structures and conductors as an overlay onto the Google
6 Earth aerial background. Within Google Earth a path is developed across the terrain, a
7 viewpoint is selected above the path and then a simulation is created showing the underlying
8 terrain and aerial photography with the structures and conductor in the view similar to what you
9 would see if you were flying over the Project at the given elevation.

10
11 **Q. Please explain the estimated cost of the Project.**

12 A. The total Project cost is anticipated to range between \$17.8-19.8 million, depending on the
13 alternative selected. Note that the construction and material costs shown are for removal
14 existing transmission and distribution lines, relocation of existing distribution to underground
15 and construction of new transmission as required. The following table provides the cost for each
16 alternative considered;

17

Alternative	Construction and Materials (\$ million)	Land Acquisition (\$ million)	Total Cost (\$ million)
Alternative A	\$ 12,474	\$ 5,379	\$ 17,853
Alternative B2	\$ 13,973	\$ 5,009	\$ 18,982
Alternative C1	\$ 13,089	\$ 6,789	\$ 19,878

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24 *Combined cost of Alternative 1 and each lettered alternative cost.

1 **Q. How does the Applicant intend to access the facilities for construction, operation, and**
2 **maintenance of the Project?**

3 A. TEP will utilize existing road rights-of-way to the extent possible. If necessary TEP will
4 coordinate with landowners for new temporary or permanent access roads.
5

6 **Q. Please describe any anticipated construction staging/laydown areas for the Project.**

7 A. TEP will use existing staging/laydown areas on TEP's Irvington Campus and/or other areas that
8 will be disturbed during the construction of the Project (i.e., the Patriot Substation site).
9

10 **Q. Will the Project require work areas for the transmission lines?**

11 A. Yes. Work areas are required for safe operation of the equipment, including construction cranes
12 and line trucks. TEP will establish temporary use areas within the right of way for each structure
13 and for tensioning and pulling and wire splicing, and will prioritize previously disturbed sites
14 requiring minimal site preparation. Work areas for tangent and angle structures will be
15 approximately 100 x 200 feet, while a larger area of 150 x 200 feet would be required for dead-
16 end sites. Traffic control plans and proper permitting to construct within the right of way shall
17 be obtained prior to construction.
18

19 **Q. Please describe the construction schedule for the project.**

20 A. Construction is estimated to start in 2021 and will take approximately twelve months to
21 complete. This estimate includes time for completion of the substation(s) as well as the
22 transmission line.
23
24

25 ///

1 **Q. Does TEP anticipate any impacts to communication signals as a result of the Project?**

2 A. TEP does not anticipate impacts on radio, television, or communication signals as a result of the
3 Project. The transmission hardware will be designed to minimize gap and corona discharges—
4 two of the primary causes of interference—and any radio frequency noise generated by the
5 facilities would be nearly non-existent in the cell phone frequency range. Television
6 interference is not expected because it is usually only a concern for transmission lines of 345
7 kV or greater and only for receivers within 500 feet of the line. There is one (1) cell tower
8 owner in the study area and TEP will coordinate with the owner as necessary.
9

10 **Q. Has the Applicant studied the technical feasibility of the Project?**

11 A. Yes. TEP studies its' system each year in preparation of its ten-year transmission plan submittal
12 to the Commission.
13

14 **Q. What did the study conclude?**

15 A. The study shows that the Project is feasible and will not adversely affect TEP. The Project will
16 alleviate power flow on the existing transmission and sub-transmission system.
17

18 **Q. Did the study indicate how the Project will support reliability?**

19 A. Yes. In particular, loads served from the planned Patriot substation will be served from two 138
20 kV transmission lines. In addition, the Project will provide improved reliability and additional
21 transmission paths for power flow thus removing the chance for existing infrastructure to
22 become overloaded under contingency conditions. The Project will create a more robust electric
23 grid and allow for future economic development within the Project area.
24
25

1 **Q. Have there been any changes to the planned facilities since the submission of the Ten-Year**
2 **Plan for Transmission Projects for Years 2020-2029?**

3 A. No, however, when the project was first identified in previous ten year plan filings, it was
4 identified as two separate Planned HV Transmission Projects. The first project was identified
5 as “Irvington 138-kV Substation – Future Davis Monthan 138-kV Substation Transmission
6 line”. The second project was identified as “Future Davis Monthan 138-kV Substation – East
7 Loop 138-kV Substation Transmission Line”. Since the filing of the 2019 ten year plan, the
8 Davis Monthan Substation has since been renamed to the Patriot Substation.
9

10 **Q. Was an EMF Analysis performed for the Project?**

11 A. Yes, TEP contracted with Power Engineers to perform an analysis for the Project. This was
12 included in the Application as Exhibit I-2.
13

14 **Q. Please discuss the results of the EMF analysis.**

15 A. The analysis concluded that the values seen at the edge of the proposed transmission line right-
16 of-way will be less than or comparable to normal everyday household appliances. Furthermore,
17 the EMF values are expected to be comparable to the EMF values as seen on other 138 kV
18 transmission lines in the state.
19

20 **Q. Please discuss anticipated noise emissions from the Project.**

21 A. Typical construction noise due to installation of the transmission line would be temporary, and
22 audible to the closest residents. This would not be considered a major impact, as the activities
23 would occur during daytime hours, and only last a few days in any one location. Long-term
24 noise impacts from transmission line operation and maintenance activities are not anticipated.
25

1 **Q. Please describe TEP's experience with the equipment to be used for the Project.**

2 A. TEP has extensive experience in transmission line development and regularly develops
3 transmission lines supported by monopole structures similar to those proposed to be used for
4 this Project.
5

6 **Q. Did TEP publish the notice of hearing?**

7 A. Yes, TEP complied with statutory notice requirements as well as notice requirements in the
8 January 23, 2020 Procedural Order issued by the Chairman of the Line Siting Committee. TEP
9 published the Notice of Hearing in the Arizona Daily Star, a newspaper of general circulation
10 within the general areas in which the proposed Project is proposed to be located as provided for
11 in the Arizona Administrative Code R14-3-208(A) on Sunday January 19, 2020, and a second
12 publication ran on Wednesday January 22, 2020. Exhibit TEP-7 contains the affidavit of
13 publication and tear sheets for publishing in the newspaper.
14

15 **Q. Please summarize your testimony.**

16 A. The Project is necessary to support DMAFB DOD resiliency directive as well as increase the
17 reliability of the existing TEP transmission system. The Project will support TEP's load serving
18 obligations and improve reliability throughout the TEP system. The routes of the transmission
19 facilities are technically practicable and the Applicant has substantial experience with the
20 equipment and methods available for achieving their technical and environmental objectives.
21 The Applicant requests approval for the preferred route identified in the Application for the
22 transmission lines.
23

24 **Q. Does this conclude your direct testimony?**

25 A. Yes it does.

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EXHIBIT TEP-4

Renee Darling's Pre-Filed Direct Testimony

1 **BEFORE THE ARIZONA POWER PLANT**
2 **AND TRANSMISSION LINE SITING COMMITTEE**

3 In the matter of the Application of Tucson Electric
4 Power Company, in conformance with the
5 requirements of A.R.S. § 40-360, et seq., for a
6 Certificate of Environmental Compatibility
7 authorizing the Irvington to East Loop 138
8 kilovolt (kV) Transmission Line Project, which
9 includes the construction of new 138 kV
10 transmission lines originating at the Irvington
11 Substation (Section 03, Township 15 South,
12 Range 14 East), with an interconnection at the
13 Port Substation (Section 18, Township 15 South,
14 Range 15 East) and the Patriot Substation (Section
15 31, Township 14 South, Range 15 East), and
16 terminating at the East Loop Substation (Section
17 08, Township 14 South, Range 15 East), each
18 located within Pima County, Arizona.

DOCKET NO. L-00000C-20-0007-00186

CASE NO. 186

19 **DIRECT TESTIMONY AND EXHIBITS**
20 **OF RENEE DARLING**
21 **ON BEHALF OF**
22 **TUCSON ELECTRIC POWER COMPANY**

1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Renee Darling. My business address is 3950 East Irvington Road, Tucson, Arizona
4 85714.

6 **Q. What is your position with Tucson Electric Power Company (“TEP” or the “Company”)?**

7 A. I am the Environmental and Land Use Planning Supervisor for TEP as well as UNS, Electric,
8 Inc. (“UNSE”). In that capacity, I am responsible for alternative route analysis, permitting,
9 oversight of resource studies, and public involvement associated with the development of TEP
10 and UNSE sub-transmission and transmission facilities, including new facilities and
11 additions/modifications/upgrades to existing facilities. I am also responsible for compiling the
12 application for a Certificate of Environmental Compatibility (“CEC”) with the Arizona
13 Corporation Commission.

15 **Q. Please briefly describe your background and work experience.**

16 A. I received a Bachelor of Science in botany from Western New Mexico University in 1991. I
17 have completed extensive post-degree education in project management, transmission line
18 siting, and public involvement.

19
20 I have worked in the environmental consulting industry since 1994 and specifically on electric
21 utility projects since 2001. My expertise includes complex multi-stakeholder and multi-
22 disciplinary projects, National Environmental Policy Act documentation and mitigation,
23 management of project data, U.S. Army Corps of Engineers jurisdictional delineation of Waters
24 of the U.S. and Section 404 permitting, and Sections 7 & 10 consultation. I was hired by TEP
25 as a contract Senior Environmental and Land Use Planner in November 2014 and made a fu

1 time employee in December 2017. I was promoted to Supervisor of Environmental and Land
2 Use Planning in May 2018.

3 Prior to my work here at TEP, I was the Director of Environmental Planning and Cultural
4 Resources at Tierra Right of Way Services in Tucson, Arizona. In that capacity, I oversaw a
5 division of 12 biologists and archaeologists. My primary focus was business development,
6 division management, and interdisciplinary project management. Previous to that, I was a
7 Project Manager at CH2M Hill in Denver, Colorado and then Tucson, Arizona, where I was
8 responsible for siting and licensing of large renewable energy projects. Previous to that, I was
9 Environmental Division Director at Tierra Right of Way Services in Tucson. In that capacity,
10 I managed complex multi-stakeholder and multi-disciplinary projects. Prior to that I was
11 Assistant Archaeologist for Dos Rios Consultants. In that capacity, I surveyed prehistoric sites,
12 identified, collected, and excavated artifacts, excavated burial sites, and analyzed artifacts.

13
14 **Q. Have you previously testified in transmission-related regulatory proceedings?**

15 A. Yes. I have testified before the Arizona Power Plant and Transmission Line Siting Committee
16 (the "Committee") on multiple transmission projects including:

- 17 • TEP's siting of the Saguaro to North Loop 138 kV quad-circuit transmission line (Case
18 149, Docket No. L-00000C-09-0385-00149);
- 19 • UNSE and Nogales Transmission, L.L.C.'s siting of the Nogales Interconnection Project
20 and the Nogales Tap to Kantor Upgrade Project (Case 176, Docket No. L-00000CCC-
21 17-0246-00176),
- 22 • TEP's Reciprocating Internal Combustion Engine Generation Project and the Irvington
23 138 kV Transmission Line Relocation Project and (Case 177, Docket No. L-00000C-
24 17-0365-00177); and

- TEP's Irvington to Kino 138 kV Transmission Line Project (Case No. 178, Docket No. L-00000C-18-0103-00178); and
- The TEP Sonoran Substation to Wilmot Energy Center 138 kV Transmission Line Project (Case 181, Docket No. L-00000C-18-0283-00181).

Q. Please explain your role in the Irvington to East Loop 138 kV Transmission Line Project (the "Project").

A. I supervised the preparation of the environmental studies and alternatives analysis conducted for the Project, as well as portions of the Application and supporting exhibits. I also organized and participated in public and stakeholder meetings.

Q. What is the purpose your direct testimony?

A. The topics I cover include:

(i) the Company's design philosophy; (ii) overview of the environmental factors to be considered by the Arizona Power Plant and Transmission Line Siting Committee ("Committee"); (iii) Environmental analyses conducted for the Project; (iv) the alternatives analysis, (v) the stakeholder and public outreach process and results; and (vi) the posting of signs and delivery of application to libraries. My analyses and recommendations are supported by the data presented in Exhibits B, C, D, E, F, G, H, and J of the Application, which were prepared by me or under my direction.

Q. What exhibits do you sponsor?

A. In addition to my Direct Testimony and Hearing Power Point Presentation, I sponsor and/or co-sponsor the following exhibits:

- Exhibit TEP-1 – Application for a Certificate of Environmental Compatibility [filed January 15, 2020]
- Exhibit TEP-5 – Hearing Power Point Presentation
- Exhibit TEP-8A –Hearing Notice Sign Location Map
- Exhibit TEP-8B – Hearing Notice Photographs
- Exhibit TEP-10 – Post card mailed on February 4, 2020

II. DESIGN PHILOSOPHY

Q. Please describe the design philosophy behind the Project.

A. TEP’s design philosophy continues to focus on minimizing land and resource impacts by aiming to first work within or next to existing infrastructure and corridors where practical. TEP also works with landowners and stakeholders to avoid or minimize project impacts.

III. OVERVIEW OF ENVIRONMENTAL FACTORS

Q. Please summarize the statutory and regulatory criteria that the committee considers in issuing a CEC.

A. The Committee is required to consider the following factors as a basis for its action:

1. Existing plans of this state, local government and private entities for other developments at or in the vicinity of the proposed site.
2. Fish, wildlife and plant life and associated forms of life on which they are dependent.
3. Noise emission levels and interference with communication signals.
4. The proposed availability of the site to the public for recreational purposes, consistent with safety considerations and regulations.
5. Existing scenic areas, historic sites and structures or archaeological sites at or in the vicinity of the proposed site.

6. The total environment of the area.
7. The technical practicability of achieving a proposed objective and the previous experience with equipment and methods available for achieving a proposed objective.
8. The estimated cost of the facilities and site as proposed by the applicant and the estimated cost of the facilities and site as recommended by the committee, recognizing that any significant increase in costs represents a potential increase in the cost of electric energy to the customers or the applicant.
9. Any additional factors that require consideration under applicable federal and state laws pertaining to any such site.

My testimony covers factors 1-6. described above and groups the analysis into two areas: 1) those related to “biological” factors: the total environment; fish, wildlife, and plant life; and special status species; and 2) “non-biological” factors: land use plans; cultural resources; scenic and recreational value; and noise emissions.

IV. ENVIRONMENTAL ANALYSIS

Q. Please describe existing conditions in the vicinity of the Project.

A. The Project will be constructed in an urban area within the City of Tucson (“COT”) and Pima County. Approximate elevations within the study area range from 2,560 to 2,800 feet above mean sea level, sloping from southeast to the northwest. Annual precipitation recorded in Tucson, Arizona is 11.7 inches. Terrain is low profile valley floor, and topography is relatively flat. The alternative route corridors within the study area are adjacent to arterial roadway and the Union Pacific Railroad; portions of Alternative C1 are adjacent to the Pantanto Wash. Soils in the study area are unconsolidated to strongly consolidated alluvial and aeolian deposits. Stormwater runoff generally drains in a west-northwest direction and is directed into regional flood control structures toward the Julian and Pantano Washes.

1 **Q. What environmental studies were conducted for the Project?**

2 A. The environmental studies conducted for the Project include a Biological Evaluation, Cultural
3 Resources Class I records review, and an Electromagnetic Field (“EMF”) analysis. The EMF
4 analysis is discussed in the testimony of Eric Raatz.

5
6 **Q. Who conducted these studies?**

7 A. TEP conducted these studies through its environmental consultants: Tierra Right of Way
8 Services (Biological Evaluation, Cultural Resources Class I records review); and Power
9 Engineers (EMF analysis).

10
11 **Q. What factors did the studies analyze?**

12 A. The Biological Evaluation provides an ecological overview of the study area, a screening
13 analysis of the potential for occurrence of federally listed, or proposed listed, threatened, or
14 endangered species; as well as state and local species of concern, and general wildlife and
15 vegetation. The Biological Evaluation assesses the potential effects of the Project on the listed
16 species, migratory birds, general wildlife and vegetation. The Cultural Resources Class I
17 records review assesses the nature of historic and cultural resources that are within the study
18 area for the Project.

19
20 **Q. Did TEP investigate whether special status species occur in the vicinity of the Project?**

21 A. Yes, Tierra Right of Way Services prepared a Biological Evaluation of endangered, threatened,
22 and candidate species protected under the Endangered Species Act, as well as state-listed
23 species of concern, that potentially occur within the study area and vicinity.

24
25 ///

1 **Q. What special status species are known to occur or may occur in the vicinity of the Project**

2 A. Based upon the desktop research and field visits to the study area, eighteen (18) special status
3 species were identified as potentially occurring within the study area, and no proposed or
4 designated critical habitat is located in the study area. A detailed screening analysis determined
5 that four (4) of these species have the potential to occur in the study area or vicinity: western
6 burrowing owl, rufous-winged sparrow, western yellow bat, and Brazilian free-tailed bat. While
7 there is potential for these species to occur in the study area, no western burrowing owls,
8 individual's sign such as scat or tracks, or potentially suitable burrows indicating their presence
9 were observed within the study area. No rufous-winged sparrows were observed in the study
10 area. No Western yellow bats were observed, however they could potentially roost in palm trees
11 along the alternative corridors. Brazilian free-tailed bats roost under the Broadway
12 Blvd./Pantano Wash bridge nearby to the C1 corridor.

13
14 **Q. Please describe the potential impacts to these species and mitigation measures TEP will**
15 **apply to reduce these impacts.**

16 A. To ensure western burrowing owls are not impacted during construction of the Project, TEP will
17 arrange for a western burrowing owl survey in any suitable areas along the approved route prior
18 to construction, and mitigate any occurrences according to AZGFD guidelines.

19
20 TEP will minimize removal of suitable foraging/nesting habitat by selection of pole locations
21 for the rufous-winged sparrow. Disturbance will be limited to pole locations and will be
22 nominal. TEP will also implement standard best management practices. Impacts to the Western
23 yellow bat are not anticipated because palm trees are located beyond the road rights-of way.
24 Impacts to Brazilian free-tailed bat are not anticipated, in the event that Alternative C1 were
25

1 approved, there would be no direct impacts to the Broadway Blvd./Pantano Wash bridge and
2 construction noise is not likely to be greater than the traffic noise already present at this location.
3

4 **Q. Please describe any other potential impacts of the Project on biological resources.**

5 A. Removal of vegetation associated with clearing and grading has the potential to impact nesting
6 birds protected under the Migratory Bird Treaty Act (“MBTA”). Some vegetation trimming and
7 removal at pole locations may be required.
8

9 **Q. What mitigation measures does TEP intend to apply to reduce the impact of the Project**
10 **on biological resources?**

11 A. In the event construction is scheduled to take place during nesting/breeding seasons, TEP will
12 conduct pre-construction bird surveys and avoid nesting birds until fledging is complete.
13 Vegetation will be checked prior to construction to ensure no impacts to migratory birds. Native
14 plants in the study area are protected by Arizona Native Plant Law (“ANPL”) and are also
15 subject to additional local regulations within the city limits of Tucson and unincorporated Pima
16 County. The COT and Pima County have standards (COT LUC 3.8.0 and Pima County Chapter
17 18.72) for native plant preservation within construction areas and guidance for mitigation of
18 impacts and TEP will follow those requirements.
19

20 **V. NON-BIOLOGICAL ENVIRONMENTAL ANALYSES**

21 ***A. Scenic Areas***

22 **Q. How were scenic areas in the vicinity of the Project and the effects of the Project on those**
23 **areas analyzed?**

24 A. TEP utilized a combination of desktop Google Earth and Geographic Information System
25 (“GIS”) data research of existing and future planned land use, in addition to field visits to

1 determine the visual quality in the area and the potential visual impacts of the Project. T
2 prepared visual simulations to compare the visual impact of the Project with pre-project
3 conditions.
4

5 **Q. Please describe the existing landscape surrounding the Project.**

6 A. The landscape setting for the study area is largely developed land within the COT and Pima
7 County, with small portions of undeveloped land in the southern portion of the project area.
8 Within and adjacent to the project area there are five settings: commercial, residential, industrial,
9 institutional, and undeveloped/open space. The four mountain ranges are all visible in the
10 distance from the project area. Existing visual impacts include power transmission and
11 distribution lines, Davis Monthan Air Force Base (“DMAFB”), the airplane “Boneyard,” and
12 Union Pacific Railroad. Commercial uses occur at almost all primary road intersections and
13 residential communities line both sides of Kolb Road and Pantano Parkway, as well as Escalar
14 Road, Golf Links Road, and 22nd Street. These residents are the primary sensitive viewers in
15 the project area.
16

17 **Q. Please describe the potential visual impacts of the Project.**

18 A. Viewer sensitivity is low for Alternative 1 as it is mainly within a more industrial setting, and/or
19 collocated with primary roads and the railroad. Viewer sensitivity is moderate for Alternative
20 A and B2 because there are pockets of residential use within the corridors but the proposed line
21 locations are within primary and secondary road rights-of-way where existing electric facilities,
22 light poles, and high-density land use occur. Viewer sensitivity would be similarly moderate for
23 the portions of Alternative C1 along primary and secondary roads, but higher for that portion of
24 Alternative C1 along the Pantano Wash, as it is a recreational setting.
25

1 **Q. Please summarize TEP's proposals to mitigate general impacts to visual resources.**

2 A. TEP plans to incorporate the following mitigation measures:

- 3 • Construction waste will be removed on a regular schedule to minimize short-term visual
- 4 impacts.
- 5 • Poles and conductors will have a non-reflective finish.
- 6 • Structures will utilize self-weathering material to blend with or complement the surrounding
- 7 landscape.

8
9 ***B. Historic Sites and Structures and Archaeological Sites***

10 **Q. Please discuss any impacts the Project may have on historic properties and archaeological**
11 **sites.**

12 A. There are two previously recorded archaeological sites in the Project area. The two previously
13 recorded sites include a linear site, AZ AA:12:875(ASM), an El Paso Natural Gas pipeline. The
14 site is considered an in-use historic structure, and no longer qualifies as an archaeological site
15 in the State of Arizona; additionally, natural gas lines have been exempted from Section 106
16 consideration (due to change in law), so there is no impact to the site, by definition. The other
17 site is a known, prehistoric archaeological site, AZ BB:13:60(ASM), that has not been evaluated
18 for the National Register of Historic Places (NRHP) by the State Historic Preservation Office.

19
20 The gas pipeline will be spanned. The prehistoric site can also be spanned, but will be further
21 evaluated during the final design and permitting of the Project. Because only a small fraction of
22 the alternative routes have been surveyed in the past 10 years, TEP will complete a Class III
23 survey of the approved alternative prior to construction. Any newly discovered eligible sites
24 would be mitigated to the appropriate degree, with avoidance being the preferred option. For
25 the known site in its current state, as well as to identify, record, and assess the significance of

1 any prehistoric or historic cultural resources in the Project area that might be adversely affect
2 by the proposed undertaking. However, because each alternative follows existing developed
3 road rights-of-way and no significant prehistoric or historic archaeological sites have been
4 previously identified in this part of Tucson, there is little potential for the survey to identify
5 significant archaeological sites within any of the Project corridors.

6
7 TEP will comply with the requirements of Arizona Revised Statutes (“A.R.S.”)§ 41-865 should
8 any human remains or cultural materials be discovered during ground-disturbing activities
9 (Tierra, 2019b). No impacts or mitigation are anticipated.

10 *C. Recreation*

11
12 **Q. Please describe the availability of the Project locations to the public for recreational**
13 **purposes.**

14 A. All of the alternative routes would be located within Pima County and COT road ROW to the
15 extent practical and would be available to the public consistent with existing use. Portions of
16 Alternatives C1 run adjacent to the Pantano Wash and would be co-located with the Pantano
17 River Park. Once constructed, the transmission line would not impact public access or use of
18 the Park, however some access and use restrictions would be required during construction and
19 future maintenance activities.

20 *D. Existing Land Use Plans*

21
22 **Q. Please describe the land use analysis conducted for the Project.**

23 A. TEP obtained existing and planned land use information from general and comprehensive plans
24 adopted by the county and city. Permitted land uses are regulated at the local level by zoning
25

1 regulations. We inventoried and mapped zoning, and areas where land use could be directly or
2 indirectly affected by the Project.

3
4 **Q. Please discuss land ownership for the Project.**

5 A. Land ownership in the study area is composed of private, City of Tucson, Pima County, Arizona
6 State Land Department, and Department of Defense (DOD).

7 **Table 1 – Land Ownership**

	Preferred Alternative B2	Alternative A	Alternative C1
Private	43%	43%	53%
Pima County	9%	10%	9%
City of Tucson	41%	39%	31%
DOD	5%	6%	5%

12
13 The proposed routes for the Project would be located within new easements over private, State,
14 and DOD land, and/or within existing COT or Pima County road rights-of-way, as allowed
15 under TEP's existing franchise agreements with Pima County and the COT.

16
17 **Q. Please provide an overview of existing land use in the vicinity of the Project.**

18 A. The land uses in the vicinity of the Project includes:

- 19 • Tourism including the Pima Air and Space Museum;
 - 20 • Medium to high-density single family residential and apartment complexes;
 - 21 • Schools, churches, etc.;
 - 22 • Commercial businesses including office/business parks and "strip-malls", retail, hotel, etc.;
 - 23 • Industrial use at Irvington Campus and in the southern portion of the project area; and
 - 24 • Military; airplane runway, airplane storage.
- 25

1 **Q. You indicated some of the land in the vicinity of the Project is dedicated to residential u**
2 **Please elaborate on that use.**

3 A. Residential use is located along the east side of Kolb Road from Irvington Road to Escalante,
4 on the north and south sides of Escalante and 22nd Streets, between Kolb and Pantano Roads,
5 and on both the east and west sides of Kolb and Pantano Roads, between Escalante and
6 Speedway. 12% of the Alternative A route, 10% of the Alternative B2 route, and 7.5% of the
7 C1 route is adjacent to existing residential land use.

8
9 **Q. Please explain the need to cite on private land?**

10 A. Depending on the alternative selected 43-53% of the alignment would require acquisition of all,
11 or a portion of the rights-of way from private landowners. This is to account for multiple factors;
12 no road right-of-way available, aerial crossings, and necessity to retain room in public rights-
13 of-way for ADA accessibility on public sidewalks.

14
15 **Q. What are the public uses of land within one mile of the Project?**

16 A. Public uses of land in the Project area include schools, churches, addiction treatment centers,
17 preschools, assisted living facilities, nursing homes, retirement homes, and day care centers.
18 These are also considered sensitive receptors Alternative A and C1 are each within 300 feet of
19 10 sensitive receptors and Alternative B2 is within 300 feet of 12 sensitive receptors.

20
21 **Q. Is TEP aware of any state or local jurisdictional land use plans in the vicinity of the**
22 **Project?**

23 A. TEP is not aware of any state land plans in the vicinity of the Project.
24 Pima County has identified the area southwest of DMAFB as a high growth area and as a focal
25 area in its economic development strategy. The development of additional transmissi

1 facilities, as well as the expansion of TIA, and a future capital improvement project along I-10
2 will support the county's goals for economic growth.

3
4 City plans in the Project area include redevelopment of Jesse Owens Park and additions to The
5 Loop, a hard surface pedestrian path that runs, in part, along the Pantano Wash,

6
7 The COT has current and planned transportation plans in the Project area including widening
8 Valencia Road from Alvernon to Houghton, widening Kolb Road in the area of DMAFB, Prop
9 101 road upgrades and maintenance, and Prop 407 greenway and bikeway upgrades and
10 maintenance.

11
12 **Q. Is TEP aware of any private plans the Project area?**

13 A. Yes, planned future land uses in the Project area include the following:

- 14 • Commercial development and expansion at the Port of Tucson
- 15 • Residential Planned Area Development and a micro hospital between Wilmot Rd and Kolb
16 Road, north of Benson Hwy.,
- 17 • New TEP community solar project southeast of the Irvington Campus.

18
19 **Q. Will the Project have any significant impacts on the land use plans mentioned above?**

20 A. No. The Project is consistent with existing and planned city, county, state, federal, and private
21 land use plans. Impacts on adjacent land use will be minimal. The Project would have positive
22 indirect impacts on current and future land uses in the region, by improving the availability of
23 reliable electric service.

24
25 ///

1 **Q. Are any local land use permits required to build the Project?**

2 A. Yes. An application for a Special Exception Land Use Permit will be required for the Patriot
3 Substation.
4

5 ***E. Federal Aviation Administration***

6 **Q. Did TEP coordinate with DMAFB regarding the impact of the Project on its departure
7 paths?**

8 A. Yes. TEP coordinated extensively with DMAFB regarding their departure paths and imaginary
9 surface layer regarding the proposed pole heights and locations. The alternative routes do not
10 exceed the designated height allowances in the project area.
11

12 **Q. Will TEP comply with Federal Aviation Administration (“FAA”) requirements?**

13 A. Yes. Preliminarily, TEP reviewed the Tucson International Airport’s (“TIA”) departure zone
14 and Airport Hazard District data and determined that the Project will not impact TIA airspace.
15

16 TEP will submit the proposed pole locations for the approved alternative to the Federal Aviation
17 Administration for Obstruction Evaluation/Airport Airspace Analysis per Title 14 of the Code
18 of Federal Regulations.
19

20 ***G. Construction***

21
22 **Q. How will TEP address environmental concerns during construction of the Project?**

23 A. TEP has extensive experience in the construction of 138 kV transmission projects in Arizona.
24 In particular, TEP has constructed transmission lines on both desert and forest properties,
25 including land owned by private individuals, Tribal lands, and lands managed by the U.S.

1 Bureau of Land Management, and the U.S. Forest Service. TEP has traversed rural areas that
2 are sensitive from both an ecological and visual standpoint. TEP was a pioneer in the
3 construction of high voltage transmission lines by helicopter and we were one of the first utilities
4 to utilize construction methods that protect the environment and decrease visual intrusion of
5 transmission lines.

6 It is TEP's practice to develop a team to oversee the construction activities. The team is
7 comprised of representatives from TEP's engineering, land, environmental and construction
8 departments.

9
10 **Q. Please explain the environmental mitigation measures that TEP plans to employ in**
11 **connection with the construction of the Project.**

12 **A.** TEP recognizes that it has an obligation to mitigate, to the extent feasible, the environmental
13 impact of the construction of the Project. In addition to using lesser visibility monopoles, TEP
14 will take steps to inform all personnel working on the Project of the importance of
15 environmental mitigation measures for the Project. Beyond this, if there are critical avoidance
16 areas in the field, TEP will demarcate these areas during construction to alert and reroute
17 construction activity as needed to protect environmental or archaeological areas of concern.
18 TEP will also require its contractor to be diligent in mitigating environmental issues. TEP
19 reserves the right in its construction contract to bar any employee that violates environmental
20 policy from the Project. TEP will also maintain a presence in the field to oversee environmental
21 concerns.
22
23
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1 **VI. PUBLIC INVOLVEMENT**

2 **Q. Please discuss TEP's public engagement program.**

3 A. TEP conducted a public engagement program starting in May 2019, that included briefings with
4 community leaders, agencies, and jurisdictions. Two series of public open houses were held on
5 May 21-22, 2019 and August 20 & 22, 2019.

6
7 Newsletters were mailed on May 1, 2019, and August 5, 2019. The two newsletters described
8 the Project and noticed the public of upcoming open houses. The first newsletter was mailed to
9 over 21,700 residents, business owners, landowners, and agency/organization representatives
10 and the second newsletter was mailed to over 36,000 residents, business owners, landowners,
11 and agency/organization representatives due to the expansion of the study area. In all of these
12 communications, TEP provided a telephone line, a Project email, and a Project website for more
13 information and for which they could contact the Company with any questions or comments
14

15 **Q. What were the results of TEP's public involvement program?**

16 A. A total of thirty-five (35) comments were received at the time of filing. 63% of respondents
17 indicated that location was their primary concern for the Project, while potential health and
18 safety concerns were the second most commented on topic, followed by cost and appearance.
19 40% of respondents indicated a preference for a particular route. Alternative C1 garnered the
20 most support, with 8 comments in favor. Alternative A was the least favored with only 3
21 comments in favor.

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1 **Q. Did TEP conduct additional public engagement for the project after filing the**
2 **Application?**

3 A. Yes. A postcard was mailed on February 4, 2020 that notified the public of TEP's selection of
4 three routes for the Project, the filing of the CEC application, and notice of the Line Siting
5 Committee hearing location and dates. Exhibit TEP-10.

6
7 **Q. Please discuss TEP's Stakeholder engagement.**

8 A. Stakeholder engagement corresponded with TEP's public engagement program starting in
9 February 2019. It included briefings with community leaders, agencies, jurisdictions, and other
10 stakeholders. TEP held two stakeholder meetings on May 7, 2019 and July 23, 2019. 113
11 individuals were invited to each of these meetings; 9 agency and organization representatives
12 attended the first meeting and 10 agency and organization representatives attended the second
13 meeting. The following stakeholders attended the meeting(s): representatives of Senator
14 Sinema, Congresswoman Ann Kirkpatrick, Pima County, Pima County Regional Flood Control
15 District, COT Transportation Department, COT Ward 4, DMAFB, Kinder Morgan, Southwest
16 Gas, Groves Lincoln Park Neighborhood Association, and Vail Preservation Society.

17
18 **Q. Did any Stakeholders have a preferred alternative?**

19 A. Pima County Regional Flood Control District supported TEP's preferred alternative B2, but did
20 not indicate a preference for any alternative. The COT commented on the Project, but did not
21 recommend a preferred route. Southwest Gas preferred Alternative C1 and secondly,
22 Alternative A.

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VII. DEVELOPMENT OF ALTERNATIVES

Q. Please describe how the alternatives were developed by TEP.

A. The methodology used to determine possible routes to connect the two endpoint substations involved data collection and analysis relevant to the criteria outlined in the CEC requirements. TEP first defined a study area that encompassed the endpoints of the Project and the two planned substations. This study area was later expanded based on public comment. Applicable data was then collected to support the criteria considered and a preliminary engineering/constructability assessment was conducted. Links were developed that could be used to form alternative routes. The study area and links were presented to the public and stakeholders in the first round of outreach. Based on public comment and TEP's initial constructability assessment, the study area was expanded to include TEP's existing 138 kV transmission line along Pantano Road. Links were also revised, removed, or added. Additional data was collected and a more detailed engineering and constructability assessment was completed. Based on this information, TI developed two Alternatives (1 & 2) for the line between Irvington and Patriot Substations and five (5) alternatives for the line between Patriot and East Loop Substations. These were presented to the public and stakeholders in the second round of outreach.

Additional analysis, coordination with DMAFB, Pima County, and the Pima Air and Space Museum resulted in the removal of Alternative 2. Alternative 1 was then combined with each lettered alternative to form five alternatives for the Project: A, B1, B2, C1, and C2. These alternatives were rated against each other in 11 criterion with a score of 3 for no effect, 2 for moderate effect, and 1 for major effect. Based on the total score of each alternative, the alternatives were then ranked from preferred to least preferred and three were selected for inclusion in the application. Alternative A, B1, and B2 tied with a score of 25/33. B1 and B2 are very similar routes, the only difference being a reroute of the existing 138 kV line (B

1 outside of a neighborhood that has encroached upon the line since it was built. Therefore, B1
2 was excluded from the application and Alternative C1 became a third alternative.
3

4 **Q. Please explain why TEP selected Alternative B2 as its preferred route.**

5 A. Both Alternative A and Alternative B2 scored 25/33 in the alternatives analysis (see Application
6 Exhibit B-1). TEP selected Alternative B2 as its preferred alternative over Alternative A based
7 on the following factors:

- 8 • Alternative A would result in two lines along Kolb Road, north of 22nd Street; a double-
9 circuit 46 kV line on one side of Kolb Road and a double-circuit 138 kV line on the other
10 side of Kolb Road, which would be less visually appealing.
- 11 • Alternative A impacts a major corridor and would cause more disruption to traffic flow
12 during construction due to the narrow ROW.
- 13 • Ability to double-circuit the existing 138 kV line along Pantano Road including removing
14 the existing line from the Tucson Meadows neighborhood;
- 15 • Wider ROW along Pantano Road, makes construction easier because of less interference
16 with existing TEP facilities and other utilities;
- 17 • Alternative A has a greater number of conflicting utility uses than Alternative B2;
- 18 • Alternative A would likely require i) the acquisition of aerial easements from private
19 landowners due to the road's ROW width, ii) conflicts with a greater number of existing
20 above-ground and buried utilities along Kolb Road, and iii) impediment to Americans with
21 Disabilities Act ("ADA") sidewalk planning requirements, likely requiring additional
22 easement acquisition.

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1 **VIII. NOTICE**

2 **Q. Were copies of the Application made available to the public?**

3 A. Yes, in conformance with the Notice of Hearing dated January 15, 2020, TEP delivered copies
4 of the Application to the following locations:

- 5 • ACC Docket Control Center, Phoenix Office, 1200 West Washington Street, Suite 108
6 Phoenix, AZ 85007;
- 7 • ACC Tucson Office, 400 West Congress Street #221, Tucson, AZ 85701;
- 8 • Eckstrom-Columbus Public Library, 4350 East 22nd Street, Tucson, AZ 85711;
- 9 • Joel D. Valdez Main Library, 101 N. Stone Avenue, Tucson, AZ 85701; and
- 10 • Murphy-Wilmot Library, 530 N. Wilmot Road, Tucson, AZ 85711

11
12 **Q. Is the Application also on the Project Website?**

13 A. Yes, the Application was posted on the Project website on January 15, 2020.
14

15 **Q. Did the Applicant post signs notifying the Public regarding the hearing?**

16 A. Yes. Exhibit TEP-8 contains proof of posting of the signs. As shown on Exhibit TEP-8B, the
17 signs contained a phone number and identified the Project website that members of the public
18 could use to communicate with us and find additional information on the Project. In accordance
19 with Chairman Chenal's, January 17, 2020 Procedural Order (the "Procedural Order" TEP
20 posted signs for the Project between January 22-24, 2020. The signs were posted at the locations
21 shown on the map in Exhibit TEP-8A. Exhibit TEP-8B contains photos of all of the signs placed
22 along the route locations.

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1 **IX. CONCLUSION**

2 **Q. In your expert opinion, is the Project compatible with the environment and ecology of the**
3 **state of Arizona?**

4 A. Yes. Based on the studies and analyses conducted and the factors identified in ARS § 40-360,
5 I believe that the Project is compatible with the environment and ecology of the state of Arizona.
6

7 **Q. What is the basis for your conclusion?**

8 A. My conclusion is based on the results of the Biological Evaluation (Application Exhibit C-2),
9 the Cultural Resources Survey (Application Exhibit E-2), the Visual Simulations prepared and
10 presented in Exhibit G-7, and other analyses TEP conducted as presented in Exhibits B, D, F,
11 and H; discussions with the public and stakeholders (as outlined in Exhibit J); the standard best
12 management practices that TEP utilizes during construction; all of which respond to the
13 environmental factors identified in ARS § 360-40.
14

15 **Q. Does this conclude your pre-filed direct testimony?**

16 A. Yes.
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EXHIBIT TEP-5
Hearing Power Point Presentation

Irvington-East Loop Transmission Line



Irvington to East Loop 138-kV Transmission Line Project

Application for a Certificate of
Environmental Compatibility

Case No. 186

February 24-28, 2020

Irvington-East Loop Transmission Line



Witness Panel

Ed Beck, Eric Raatz, & Renee Darling

Irvington-East Loop Transmission Line



ED BECK

Director of Transmission Development

Irvington-East Loop Transmission Line



- Employment
 - Tucson Electric Power Company (TEP), Director of Transmission Development
- Role
 - Siting projects for TEP sub-transmission and transmission facilities
 - Supervised preparation of Application and supporting exhibits
- Experience and Education
 - B.S. Civil Engineering, University of Arizona
 - MBA, University of Arizona
 - Registered Professional Engineer (Civil) AZ
 - Member American Society of Civil Engineers
 - 40 years of experience in electric utility industry

Irvington-East Loop Transmission Line



Overview of Testimony

- Overview of the Irvington to East Loop 138kV Project
 - Purpose and Need
 - Substation Versus Switchyard

Irvington-East Loop Transmission Line



ERIC RAATZ

Manager Operations Planning

Irvington-East Loop Transmission Line



- Employment
 - TEP, Manager of Operations Planning
- Role
 - Technical oversight
 - Public & stakeholder engagement
 - Preferred & alternative routes
 - Tour & associated map
 - Legal description & associated map

Irvington-East Loop Transmission Line



- Education & Experience
 - Bachelor of Science in Civil Engineering, The University of Arizona, 2000
 - Registered Professional Civil Engineer, Arizona, 2006
 - Manager, Operations Planning, 2019 – Present
 - Transmission Planning Engineer, 2013 – 2019
 - Civil Transmission Engineer, 2008 – 2013
 - Civil Consulting Engineer, 2001 – 2008

Irvington-East Loop Transmission Line



Overview of Testimony

- Project Overview
- Purpose & Need
- Technical Components
 - Design Considerations
 - EMF Study
- Associated Costs
- Google Earth Flyover
- Conclusion

Irvington-East Loop Transmission Line



RENEE DARLING Environmental and Land Use Supervisor

Irvington-East Loop Transmission Line



- Employment
 - TEP, Environmental and Land Use Supervisor
- Role
 - Alternative route analysis
 - Permitting
 - Oversight of resource studies
 - Public & Stakeholder Engagement

Irvington-East Loop Transmission Line



- Education & Experience
 - Bachelor of Science in Botany, Western New Mexico University, 1991
 - Post-degree education: project management, transmission line siting, public involvement
 - Environmental Consulting from 1994
 - Electric utility projects from 2001

Irvington-East Loop Transmission Line



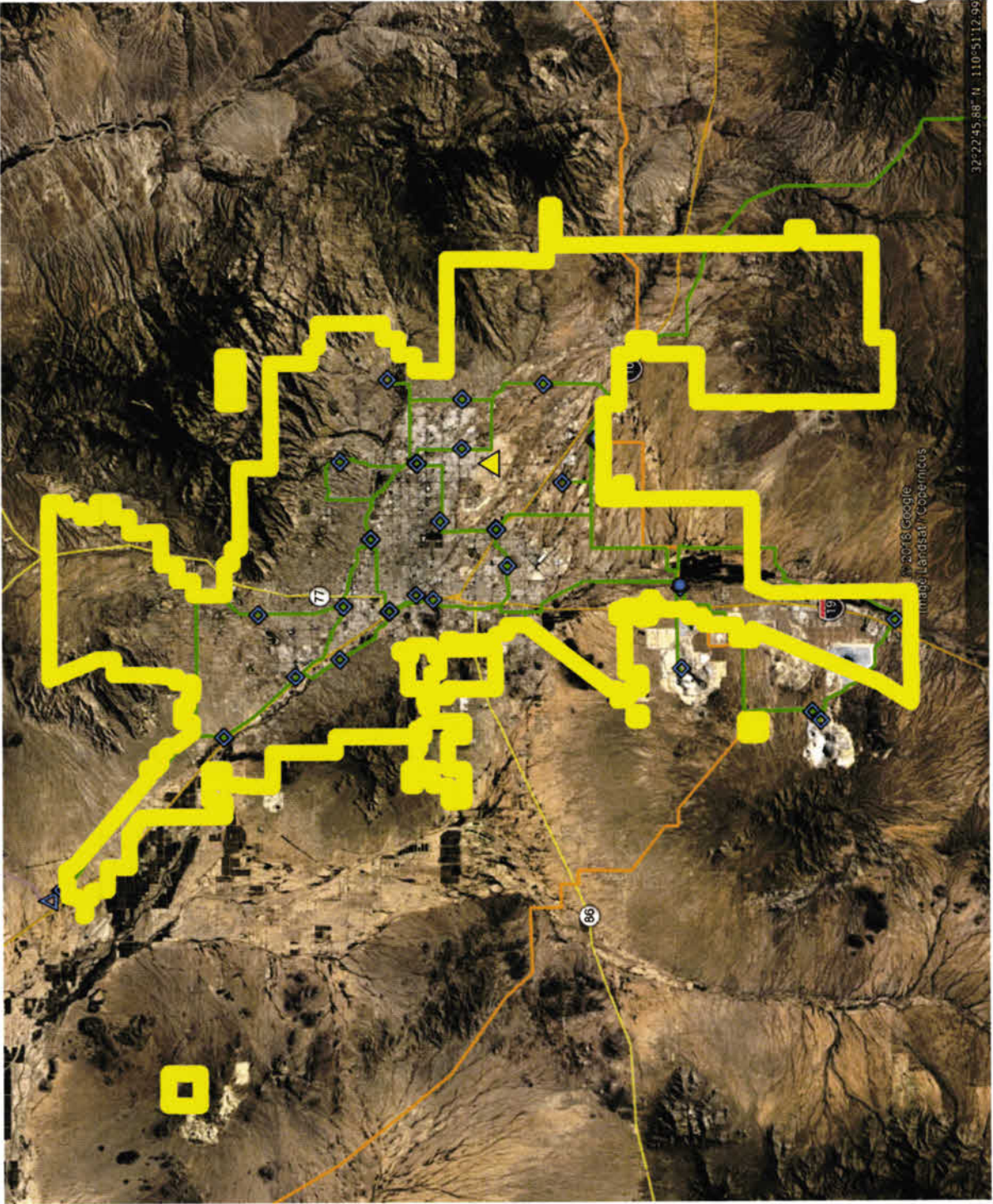
Overview of Testimony

- TEP's Design Philosophy
- Planning Process
- Studies Conducted
 - Biological
 - Non-Biological
- Public & Stakeholder Engagement
- Alternatives Development
- Proof of Posting
 - Exhibit TEP-8

Irvington-East Loop Transmission Line



TEP OVERVIEW



Project Study Area

- Interstate
- Revised Study Area
- Davis-Monthan Air Force Base

Existing Substations

- 46 kV
- 138 kV
- 345 kV

Existing Power Lines

- 46kV
- 138kV
- 345kV

NOT TO SCALE

-  Interstate
 Revised Study Area

Existing Substations

- △ 46 kV
- ▲ 138 kV
- ▲ 345 kV

Existing Power Lines

- 46kV
138kV
345kV



NOT TO SCALE

Irvington-East Loop Transmission Line



SWITCHYARD VS. SUBSTATION

Irvington-East Loop Transmission Line



A.R.S § 40-360.10

"Transmission line" means a series of new structures erected above ground and supporting one or more conductors designed for the transmission of electric energy at nominal voltages of one hundred fifteen thousand volts or more and all new switchyards to be used therewith and related thereto for which expenditures or financial commitments for land acquisition, materials, construction or engineering in excess of fifty thousand dollars have not been made prior to August 13, 1971.

JOHNSTON MAYNARD
GRANT AND PARKER
P.L.L.C.

ATTORNEYS AT LAW
1000 NORTH CENTRAL AVENUE, SUITE 1200
PHOENIX, ARIZONA 85004

MICHAEL M. GRANT
DIRECTOR

(602) 279-4517

Ms. Carol Peters
ASPCO
P.O. Box 470
Benson, Arizona 85602

Re: Substation for Sanchez Mining

Dear Carol:

As we've discussed, ASPCO proposes to construct a substation (involving less than three tower structures) would be dropped off the existing Greenlee-Dos Conados line and a substation would be built. Later, it's possible that the existing line will be moved, but for now all that is contemplated is the construction of a new substation. I've reviewed the proposed substation and the related facts since our conclusions are specifically based on them.

The issue is whether a Certificate of Environmental Compatibility must be obtained in these circumstances from the Power Plant and Transmission Line Siting Committee (the Committee). The Committee's rules require that a "switchyard" term is used in A.R.S. § 40-1409. Secondly, even if it could be argued that a substation is similar to or included within the term "switchyard," no "series of new (transmission) structures" is being constructed "to be used therewith and related thereto..."

I discussed this conclusion recently with Tom Parish of Arizona Public Service. Mr. Parish was involved in the drafting and passage of the Committee statutes some twenty years ago. Mr. Parish agreed with this conclusion and stated the term "switchyard" was specifically chosen at that time so as not to include substation construction in Committee jurisdiction.

Finally, I discussed these facts and conclusions with Assistant Attorney General Charles Pierson, the Chairman-designee of the Committee, this morning. He agreed a certificate was not necessary under these circumstances and the Committee would not have jurisdiction.

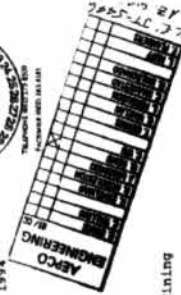
Ms. Carol Peters
May 10, 1994
Page 2

Should you have any questions or if I've misunderstood any facts, please call.

Very truly yours,

Mike
Michael M. Grant
For the Firm

MMG/vgh
cc: Robert Hewlett, Esq.
mmgltre\315



"I discussed this conclusion recently with Tom Parish of Arizona Public Service. Mr. Parish was involved in the drafting and passage of the Committee statutes some twenty years ago. Mr. Parish agreed with this conclusion and stated the term "switchyard" was specifically chosen at that time so as not to include substation construction in Committee jurisdiction."

Irvington-East Loop Transmission Line



- TEP's position is:
 - If a CEC application includes a switchyard the switchyard is subject to approval by the Siting Committee / Commission
 - If a CEC application includes a substation TEP will not ask for approval of the substation but does provide information on the substation as part of its application
- Mr. Grant's letter quoting Mr. Tom Parish lends support to TEP's position
- TEP's position is consistent with local requirements within Pima County and the City of Tucson where the bulk of TEP's service territory is located

Irvington-East Loop Transmission Line



- Within Pima County TEP is required to obtain a Power Substation Permit per the Pima County Zoning Code
- Within the City TEP must obtain a Special Exception Land Use Permit for a substation.
- Both jurisdictions require permitting for substations and not switchyards consistent with the concept that the ACC has jurisdiction over switchyards while the local authorities have jurisdiction over substations

Irvington-East Loop Transmission Line



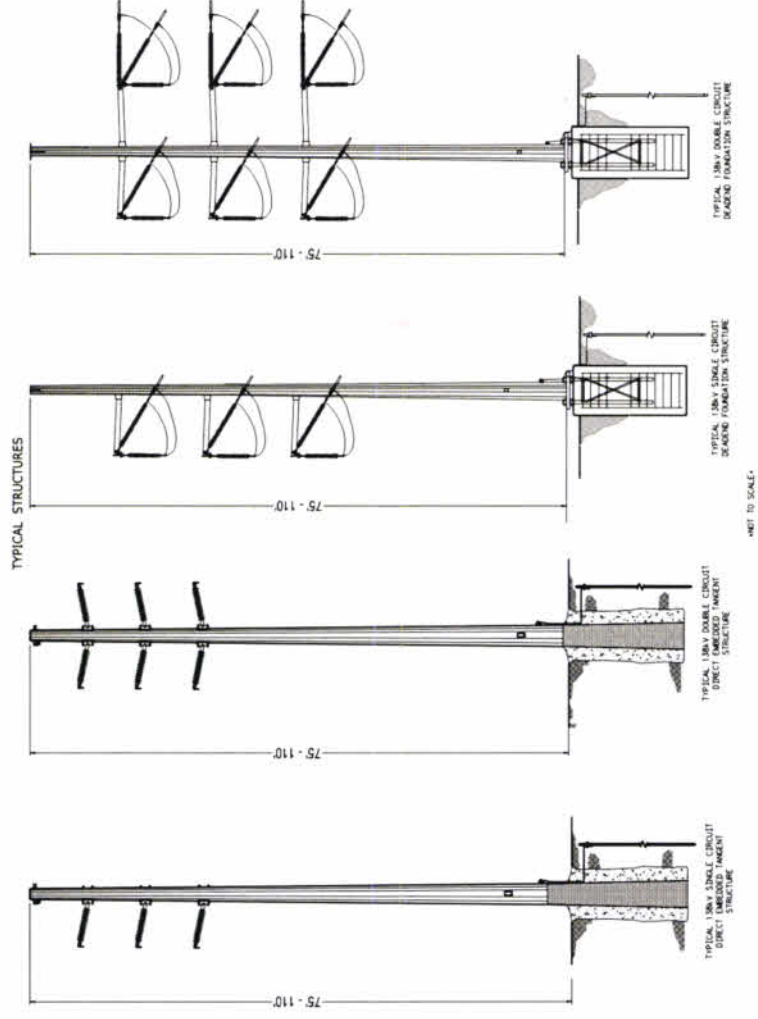
PROJECT OVERVIEW

Irvington-East Loop Transmission Line



- New 138 kV transmission line connecting the existing Irvington & East Loop 138 kV Substations
- Interconnections at the future Port and planned Patriot 138 kV Substations
- Length is between 11 – 13 miles
- CEC Application is requesting a 300-ft corridor with 100-ft ROW

Irvington-East Loop Transmission Line



Irvington-East Loop Transmission Line



COST

- Variations in cost depend upon:
 - Length of construction
 - Quantity of materials required
 - Mitigation of existing conflicts
 - Acquisition of land rights.
- Note that the construction and materials costs shown include:
 - Wreck out of existing transmission and distribution lines
 - Relocation of existing distribution to underground
 - Construction of new transmission as required.
- The total Project cost is anticipated to range between \$17.8-19.8 million

Alternative	Construction and Materials (\$ million)	Land Acquisition (\$ million)	Total Cost (\$ million)
Alternative A	\$ 12.47	\$ 5.38	\$ 17.85
Alternative B2	\$ 13.97	\$ 5.01	\$ 18.98
Alternative C1	\$ 13.09	\$ 6.79	\$ 19.88
*Combined cost of Alternative 1 and each lettered alternative cost.			

Irvington-East Loop Transmission Line



PURPOSE AND NEED

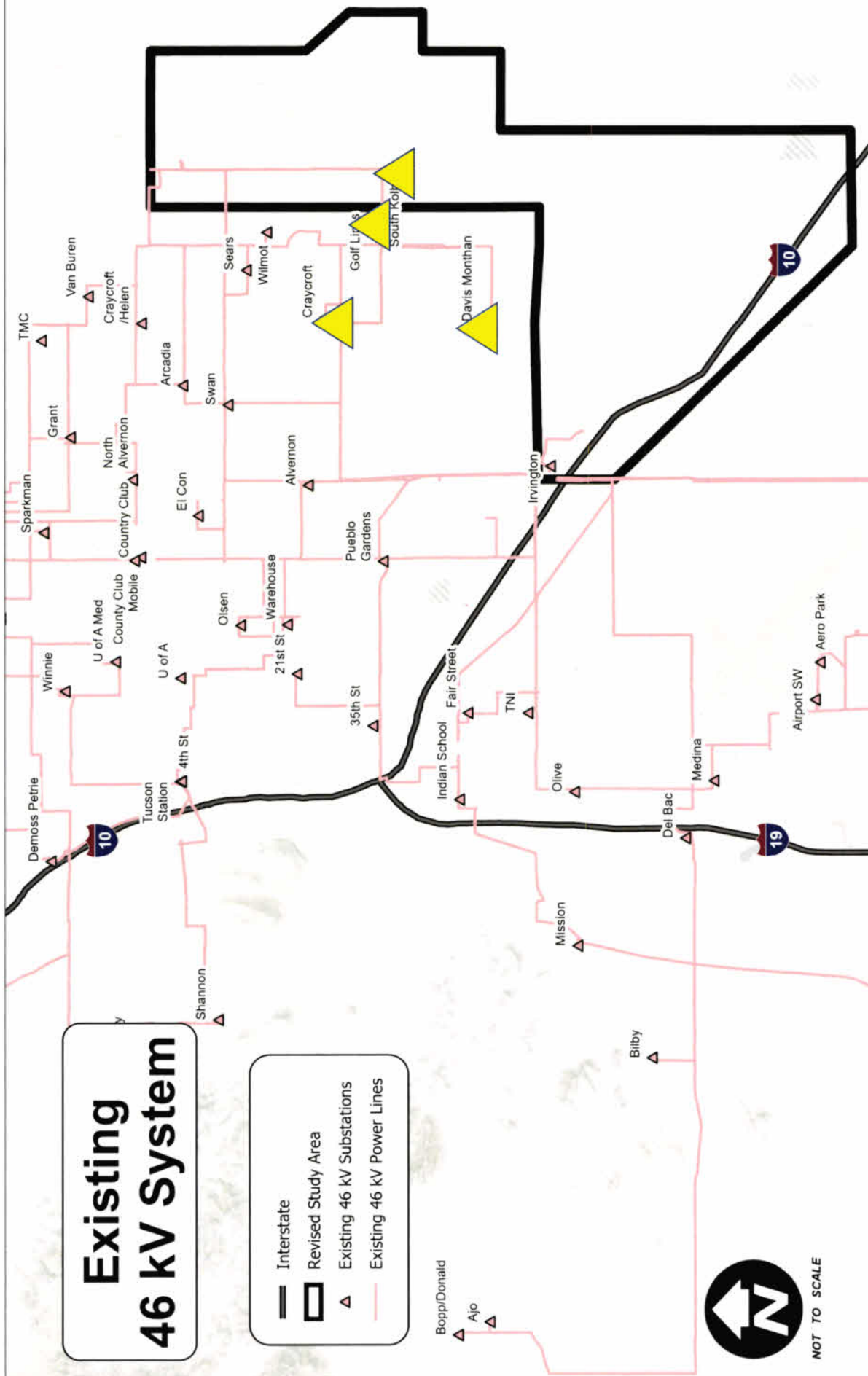
Irvington-East Loop Transmission Line



- Transmission line is required to improve service to the TEP service area north of Davis Monthan Air Force Base (DM)
- Current 46 kV system serving base operates as radial and is aging
- United States Department of Defense (DOD) energy resiliency directive
- Project will provide a “loop” for serving DM at the 138 kV level
- Provides added capability to serve future growth and opportunity to eliminate 46 kV substations in the future

Existing 46 kV System

- Interstate
- Revised Study Area
- Existing 46 kV Substations
- Existing 46 kV Power Lines



NOT TO SCALE

[illegible]

to please we give our respective groups permission to circulate their self-determined enhanced energy initiative. Our organizations are aligned in the grass-roots partnership in that matter would create a positive ripple effect throughout the world.

Sincerely,



David Handman
President and Chief Executive Officer
Twelve Twelve Power

Dear Mr. Hanchetta,

Thank you for allowing your staff on multiple occasions to visit our Civil Engineer/Quantity leadership and our energy team. I believe that your staff has a great understanding of the challenges of energy efficiency and energy assurance goals that you have developed with your staff.

Your 6 April proposal letter outlined the potential savings of incorporating indirect combustion engine in close proximity to our existing combustion engine. We are eager to enter into a more direct partnership with your staff to develop a more efficient, financial responsible and energy efficient combustion engine. We are confident that your staff and standard form our staff will be able to work the details and gain the savings that we are seeking.

I respectfully request a rough timeline of the next steps in this partnership. We are confident that this partnership will lead to positive benefits for the greater Los Angeles area.

Sincerely,
David J. Hanchetta

Sincerely,

SCOTT J. COX

Mr. David Hutchens
President and Chief Executive Officer
Tucson Electric Power
88 East Broadway Blvd.
Tucson, AZ 85701-1720

Thank you for your continued dedication of TEP's time and resources to meet with our Civil Engineer Squadron leadership and energy teams. We would like to continue working with TEP to improve energy resilience for DMAA/B as well as the surrounding community.

Year 12 July presentation and *Year 10* July letter both contain proposals that warrant further investigation. The proposals include a new substation, adding a second transformer and serving DWAH through a looped 138 kV/40 kV transmission system. We agree that this phased approach, which includes new term improvements and preparations, will put DWAH in a position to take advantage of technologies that will become available in the future. We also understand the proposed project could include a TTP-owned reciprocating internal combustion engine and/or storage batteries on DWAH property.

We agree to dedicate our Wing's resources to a formal joint TEP/DMA/PH technical task force, and to continue working towards energy resiliency improvements on DMA/PH and in the greater Tucson area. As you are aware, the ultimate goal of this partnership is to produce a vetted set of recommendations that meet the energy resiliency goals of DMA/PH and

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

Irvington-East Loop Transmission Line



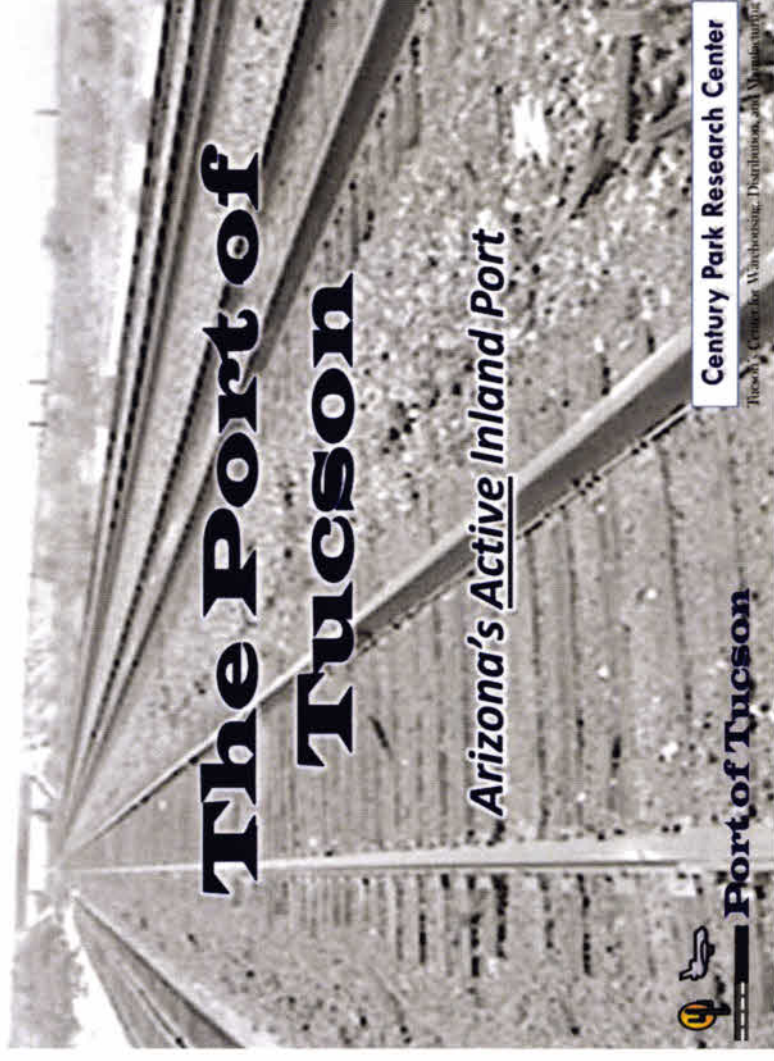
Objectives in United States Air Force Energy Flight Plan

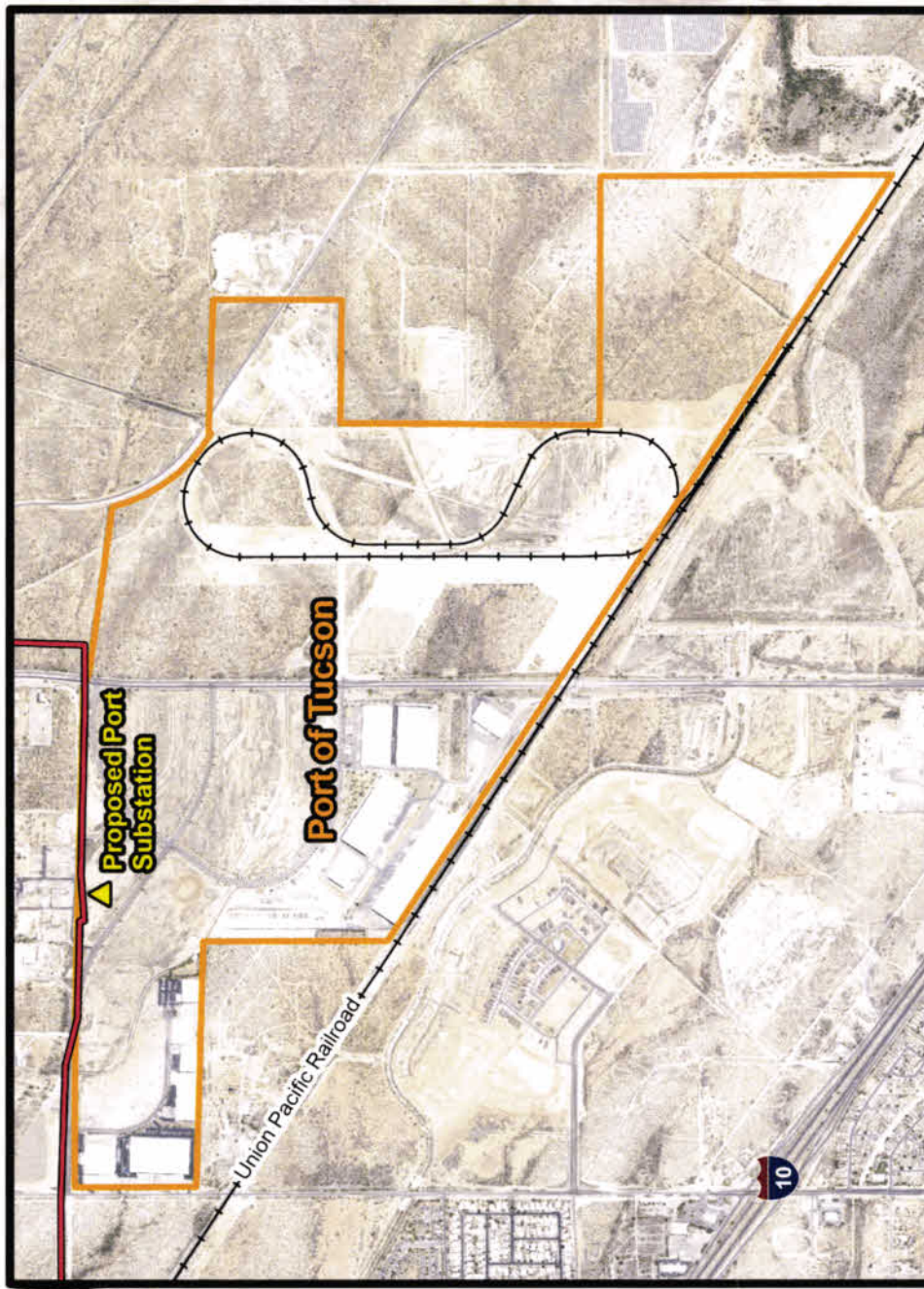
- FY20: Increase the use of energy resiliency technologies and partnerships for critical infrastructure to improve energy security
- FY25: Eliminate 20% of the single point(s) of failure for facility energy associated with critical infrastructure
- FY35: Eliminate 100% of energy shortfalls to improve contingency operations

Irvington-East Loop Transmission Line

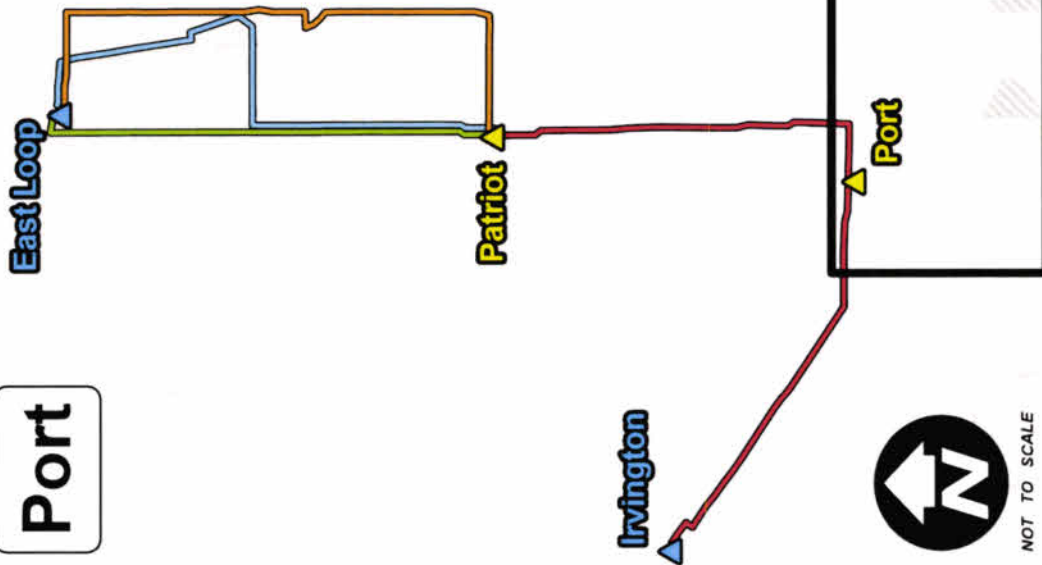


- Full service inland port, rail yard and intermodal facility
- 767 acre business park
- Designated as “shovel ready” by City of Tucson and Pima County development services
- Over 1.7 million sq. ft. of manufacturing, warehousing, and distribution buildings with plenty of space to grow
- Active Foreign Trade Zone as well as State of Arizona Enterprise Zone





Note 1: Alternative C1 is an offset graphic representation to show common overlap alignments.



Port

Irvington

Patriot

East Loop



NOT TO SCALE

Irvington-East Loop Transmission Line

TRANSMISSION CAPACITY



- Studies prior to the inclusion of the Irvington – East Loop Project identified four existing lines that became overloaded:
 - Los Reales – Vail
 - Pantano – Los Reales
 - East Loop – Pantano
 - 22nd Street – East Loop
- Inclusion of the Irvington – East Loop Project resolved the previously identified overloads

Irvington-East Loop Transmission Line



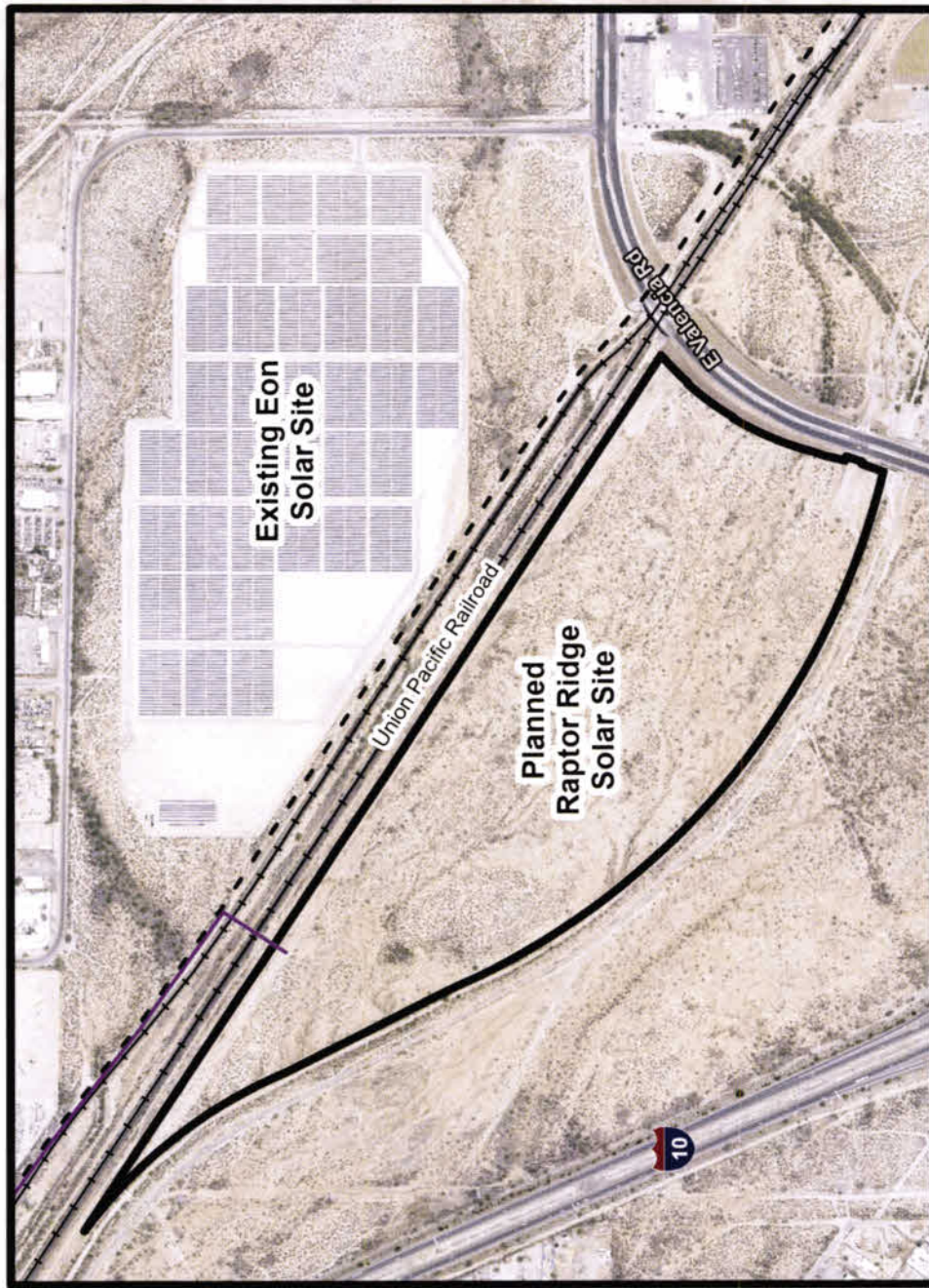
PROJECT DEVELOPMENT & CONSIDERATIONS

Irvington-East Loop Transmission Line

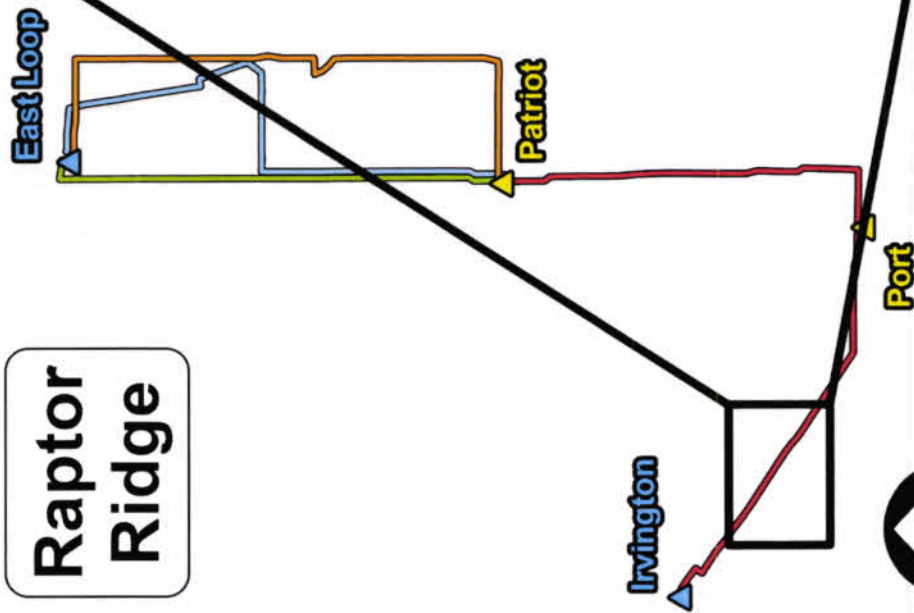


Design Philosophy

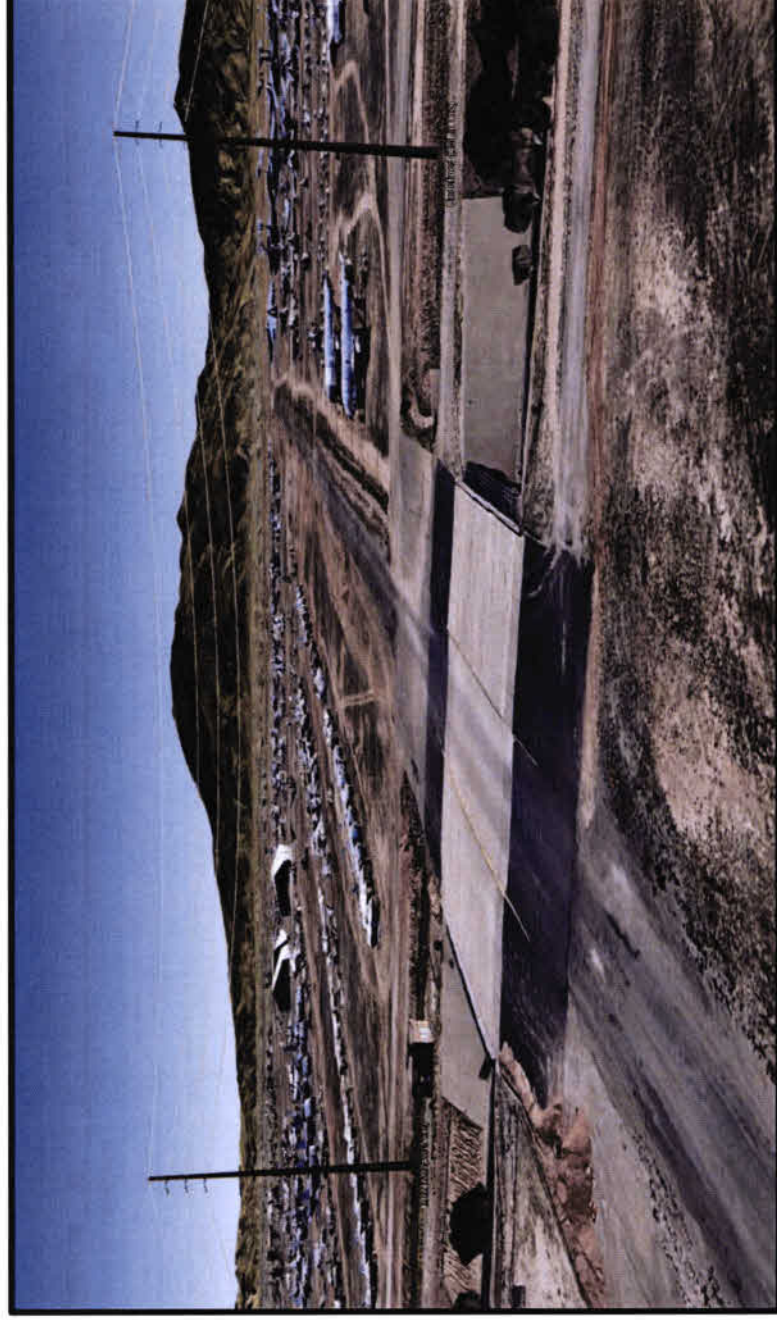
- Minimize impacts
- Work within or next to existing infrastructure or corridors, where practical
- Work with landowners and stakeholders



Note 1: Alternative C1 is an offset graphic representation to show common overlap alignments.



Irvington-East Loop Transmission Line

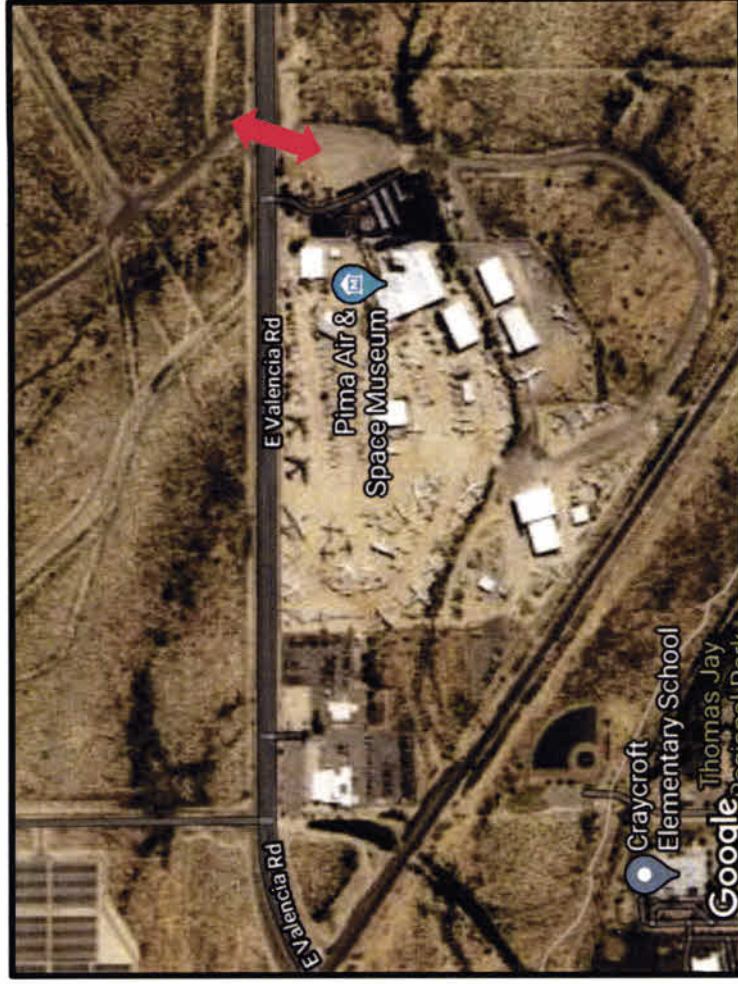


Irvington-East Loop Transmission Line



- Structures designed to accommodate largest plane in DM fleet for major crossing (C5)
- Height of tail of C5 = 65 feet
- Wingspan = 222.8 feet
- Span of crossing is approximately 518 feet, 250 feet either side of the centerline of bridge crossing
- Height of structures spanning crossing are 142 feet
- Clearance to conductor at centerline of crossing is approximately 90 feet

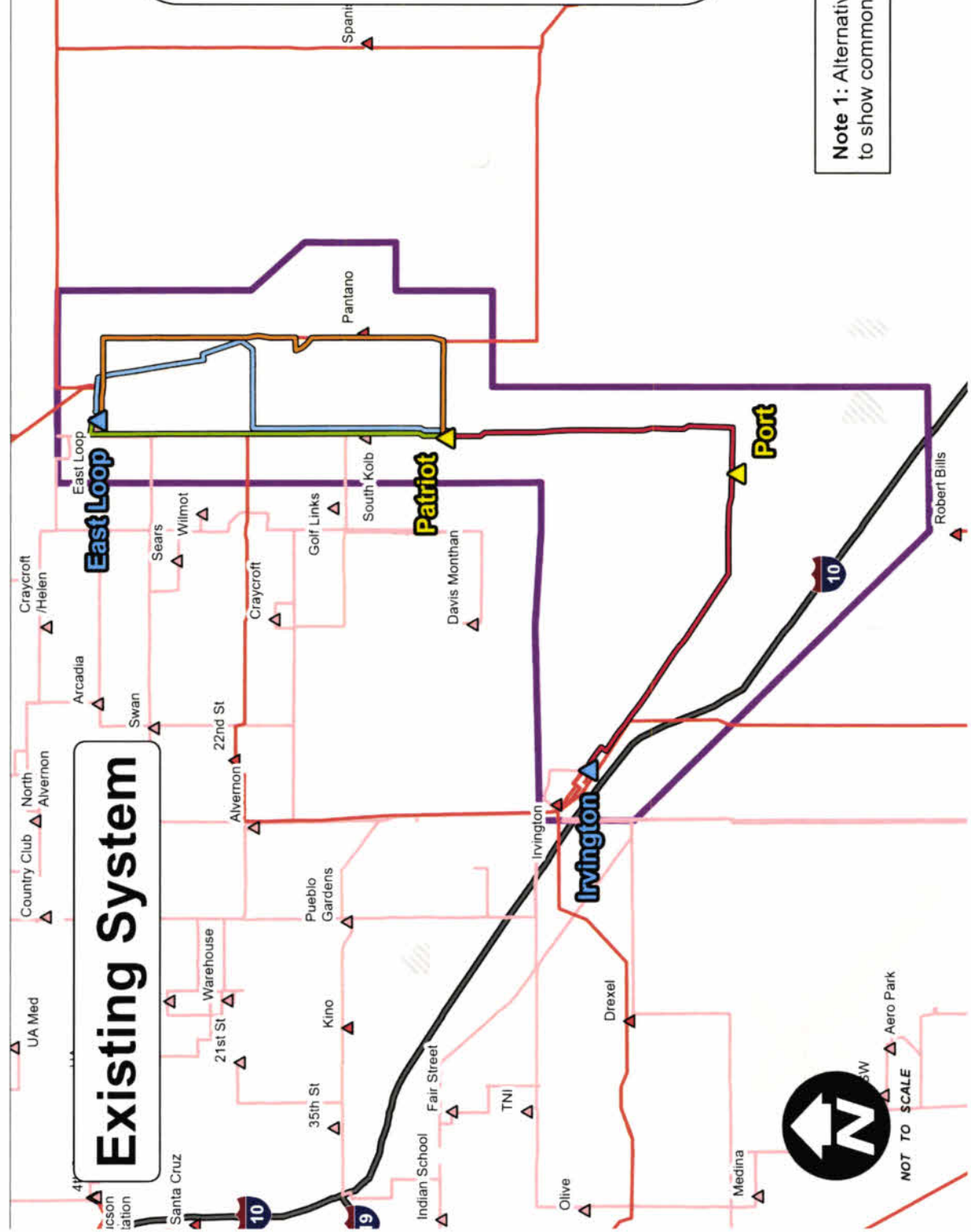




Existing System

- Existing Substation (Project)
- Planned Substation
- Alternative 1 (Common Route)
- Alternative A
- Alternative B2 (Preferred)
- Alternative C1 (See Note)
- Revised Study Area
- Interstate
- Existing Substations
- 46 kV
- 138 kV
- 345 kV
- Existing Power Lines
- 46kV
- 138kV
- 345kV

Note 1: Alternative C1 is an offset graphic representation to show common overlap alignments.



Irvington-East Loop Transmission Line



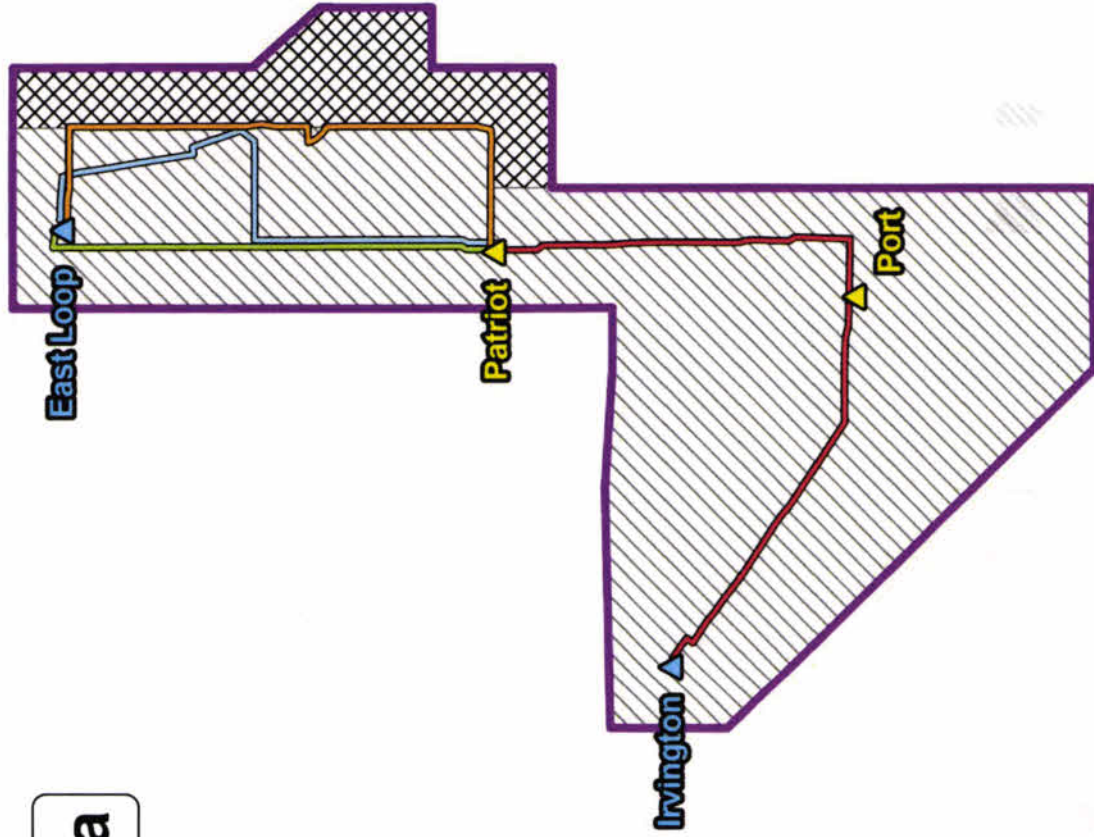
ALTERNATIVE ROUTE ANALYSIS

Irvington-East Loop Transmission Line



- Methodology
 - Study Area
 - Links
 - Alternatives
 - Preferred Alternative Justification

Study Area

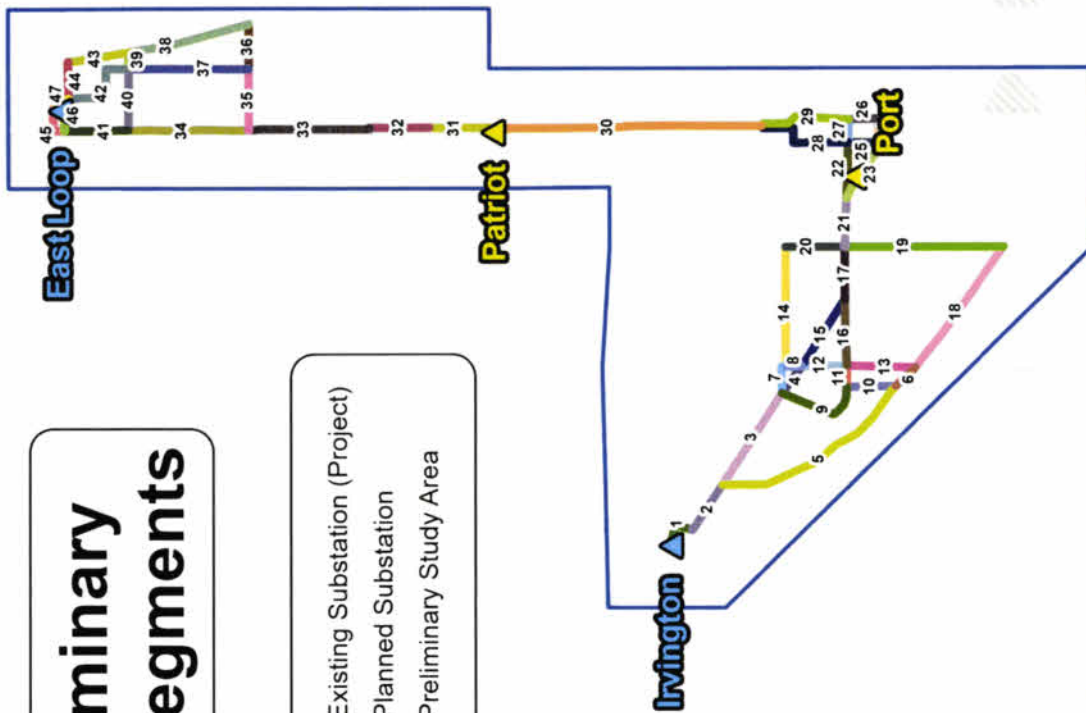


NOT TO SCALE

Note 1: Alternative C1 is an offset graphic representation to show common overlap alignments.

Preliminary Link Segments

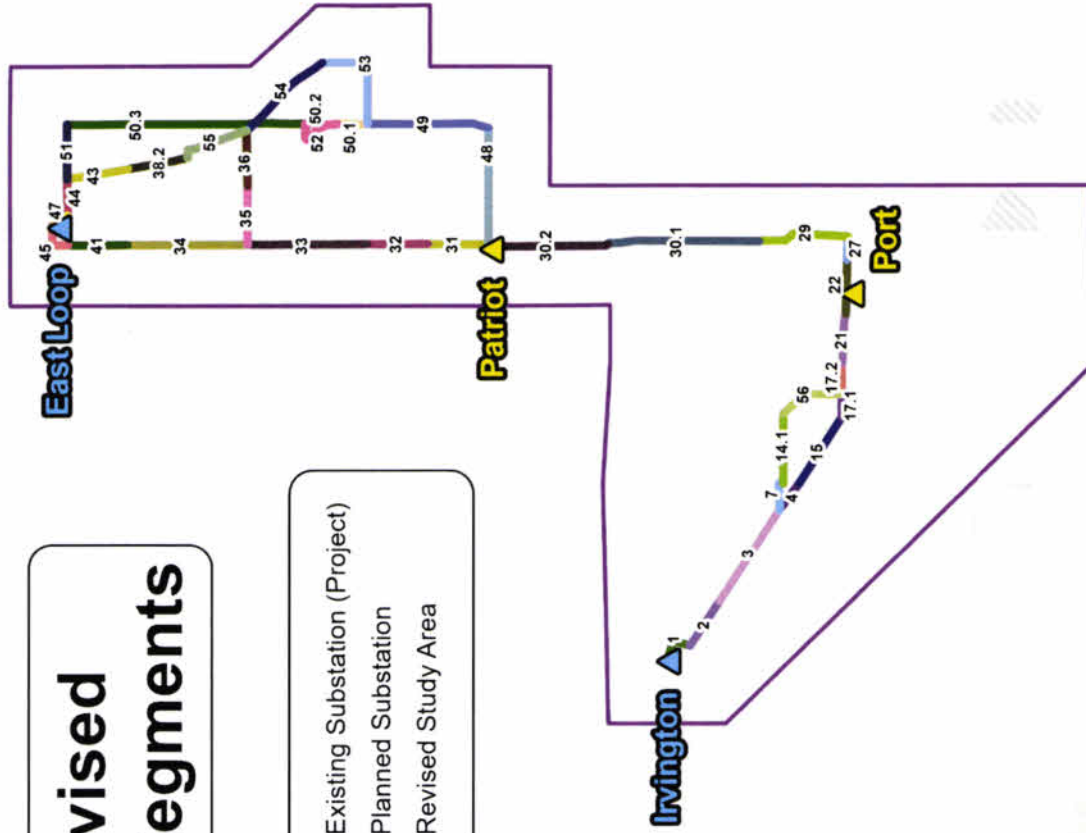
- Existing Substation (Project)
- Planned Substation
- Preliminary Study Area



Segment #	Name	From	Segment To
1	Irvington Campus	n/a	n/a
2	Irvington Campus	n/a	n/a
3	UNS RR Spur	Irvington Campus	Craycroft Rd
4	UNS RR Spur	Segment 3	Segment 8/12
5	I-10	Irvington Campus	Segment 6/10
6	I-10	Segment 6/10	Craycroft Rd
7	RR Spur Access Rd	Segment 3	Craycroft Rd
8	Craycroft Rd	Valencia Rd	UPRR
9	Craycroft/Valencia Bypass	Segment 3	Segment 10/11
10	Craycroft Rd. Bypass	Segment 9	I-10
11	Littletown Rd.	Segment 9	Craycroft Rd
12	Craycroft Rd	UPRR	Littletown Rd.
13	Craycroft Rd	Littletown Rd.	I-10
14	Valencia Rd	Craycroft Rd	Wilnot Rd
15	UNS RR Spur	Craycroft Rd	Littletown Rd.
16	Littletown Rd.	Craycroft Rd	UPRR
17	Littletown Rd.	UPRR	Wilnot Rd
18	I-10	Craycroft Rd	Wilnot Rd
19	Wilnot Rd	I-10	Littletown Rd.
20	Wilnot Rd	Littletown Rd.	Valencia Rd
21	Littletown Rd.	Wilnot Rd	Port Substation
22	Littletown Rd. (old alignment)	Port Substation	Segment 28
23	Littletown Rd. (new alignment)	Port Substation	Segment 24/25
24	Littletown Rd. (new alignment)	Segment 23	Segment 26
25	West of Kolb Road (outside scenic coord.)	Littletown Rd. (new alignment)	Littletown Rd. (old alignment)
26	East of Kolb Road (outside scenic coord.)	Littletown Rd. (new alignment)	Littletown Rd. (old alignment)
27	Littletown Rd. (old alignment)	Segment 22	Segment 29
28	West of Kolb Road (outside scenic coord.)	Littletown Rd. (old alignment)	UPRR Spur
29	East of Kolb Road (outside scenic coord.)	Littletown Rd. (old alignment)	UPRR Spur
30	Kolb Rd	UPRR Spur	DM East Substation
31	Kolb Rd	Warthog Substation	Stella Rd
32	Kolb Rd	Stella Rd	Golf Links Rd
33	Kolb Rd	Golf Links Rd	22nd St
34	Kolb Rd	22nd St	Broadway Blvd
35	22nd St	Kolb Rd	Prudence
36	22nd St	Prudence	Pantano Wash
37	Prudence	22nd St	Broadway Blvd
38	Pantano Wash	22nd St	Broadway Blvd
39	Broadway Blvd	Prudence	Pantano Wash
40	Broadway Blvd	Kolb Rd	Prudence
41	Kolb Rd	Broadway Blvd	South of East Loop Access
42	Prudence/landfill Alignment	Broadway Blvd	East Loop Substation
43	Pantano Wash	Broadway Blvd	Existing TEP 3-circuit lattice
44	Existing TEP 3-circuit lattice	Pantano Wash	Segment 47
45	North of East Loop Access	Segment 41	East Loop Substation
46	South of East Loop Access	Segment 41	East Loop Substation
47	Southeast of East Loop Access	Segment 42/43	East Loop Substation

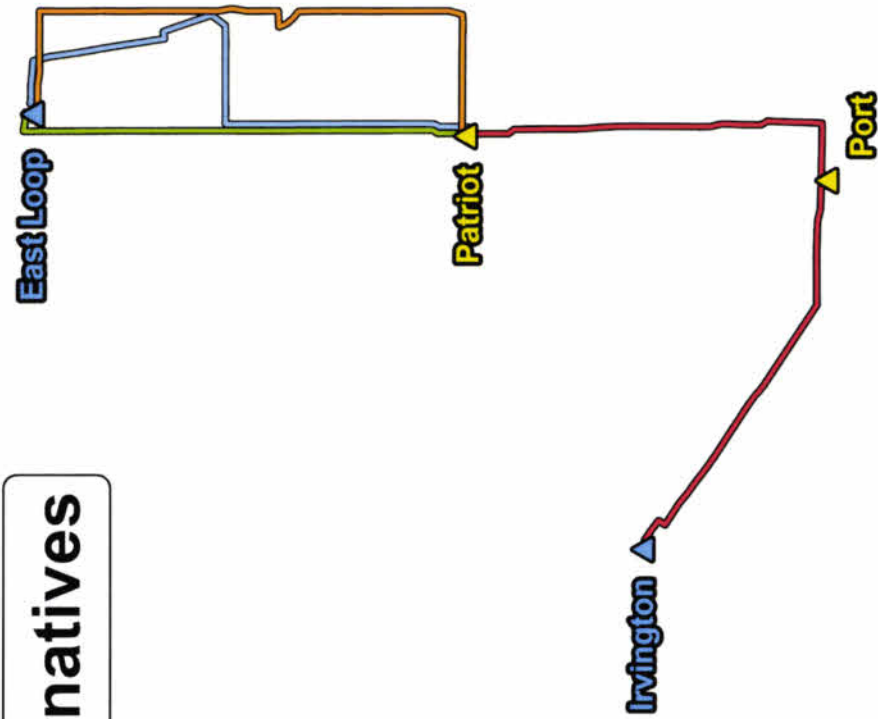
Revised Link Segments

- Existing Substation (Project)
- Planned Substation
- Revised Study Area



Segment #	Name	Segment	
		From	To
1	Irvington Campus	n/a	n/a
2	Irvington Campus	n/a	n/a
3	UNS RR Spur	Irvington Campus	Craycroft Rd.
4	UNS RR Spur	Segment 3	Segment 8/12
7	RR Spur Access Rd.	Segment 3	Craycroft Rd.
14.1	Valencia Rd.	Craycroft Rd.	PASM Driveway
15	UNS RR Spur	Craycroft Rd.	Littletown Rd.
17.1	Littletown Rd.	Segment 15	Segment 17.2
17.2	Littletown Rd.	Segment 17.1	Wilmot Rd.
21	Littletown Rd.	Wilmot Rd.	Port Substation
22	Littletown Rd. (old alignment)	Port Substation	Segment 28
27	Littletown Rd. (old alignment)	Segment 22	Segment 29
29	East of Kolb Rd. (outside scenic coord.)	Littletown Rd. (old alignment)	UPRR Spur
30.1	Kolb Rd.	Segment 29	Irvington Rd.
30.2	Kolb Rd.	Irvington Rd.	Patriot Substation
31	Kolb Rd.	Patriot Substation	Stella Rd.
32	Kolb Rd.	Stella Rd.	Golf Links Rd.
33	Kolb Rd.	Golf Links Rd.	22nd St.
34	Kolb Rd.	22nd St.	Broadway Blvd.
35	22nd St.	Kolb Rd.	Prudence Rd.
36	22nd St.	Prudence Rd.	Pantano Wash
38.2	Pantano Wash	Kenyon Dr.	Broadway Blvd.
41	Kolb Rd.	Broadway Blvd.	South of East Loop Access
43	Pantano Wash	Broadway Blvd.	Existing TEP 3-circuit lattice
44	Existing TEP 3-circuit lattice	Pantano Wash	Segment 47
45	North of East Loop Access	Segment 41	East Loop Substation
47	Southeast of East Loop Access	Segment 42/43	East Loop Substation
48	Escalante Rd	Kolb Rd.	Pantano Rd.
49	Pantano Rd	Escalante Rd.	Golf Links Rd.
50.1	Pantano Road	Golf Links Rd.	Sundew Dr.
50.2	Tucson Meadows Neighborhood	Sundew Dr.	Research Loop
50.3	Pantano Rd	Research Loop	5th St.
51	Existing TEP 3-circuit lattice	Pantano Rd.	Pantano Wash
52	Pantano Rd	Sundew Dr.	Research Loop
53	Golf Links Rd.	Pantano Rd.	Approx. Pantano Wash
54	Pantano Wash	Approx. Golf Links Rd.	22nd St.
55	Pantano Wash	22nd St.	Kenyon Dr.
56	PASM	Valencia Rd.	Littletown Rd.

Final Alternatives



Note 1: Alternative C1 is an offset graphic representation to show common overlap alignments.

Irvington-East Loop Transmission Line



Preferred Alternative Justification

- Rank
- Relieves encroachment
- Wider ROW
- Less conflicting utility uses
- Less visual impact
- Less construction impact

Irvington-East Loop Transmission Line



GOOGLE FLYOVER

Irvington-East Loop Transmission Line



TOUR OVERVIEW

Irvington-East Loop Transmission Line



PUBLIC COMMENT

Irvington-East Loop Transmission Line



OVERVIEW OF THE PLANNING PROCESS

Irvington-East Loop Transmission Line



- Statutory and Regulatory Criteria
- Conduct Studies & Analysis
- Stakeholder and Public Outreach

Irvington-East Loop Transmission Line



Statutory & Regulatory Criteria

- Plans of the state, local government and private entities
- Fish, wildlife and plant life
- Recreation
- Scenic areas, historic sites and structures or archaeological
- Total environment
- Any additional factors

Irvington-East Loop Transmission Line



Studies Conducted

- Biological Evaluation
 - Federally listed, proposed listed, threatened, endangered species
 - General wildlife and vegetation
 - Migratory birds
- Cultural Resources Inventory
 - Historic and cultural resources
 - Land Use Analysis
 - Noise Assessment
 - EMF
 - Recreation Assessment
 - Visual Simulations
 - Alternatives Analysis

Irvington-East Loop Transmission Line



BIOLOGICAL STUDIES

Irvington-East Loop Transmission Line

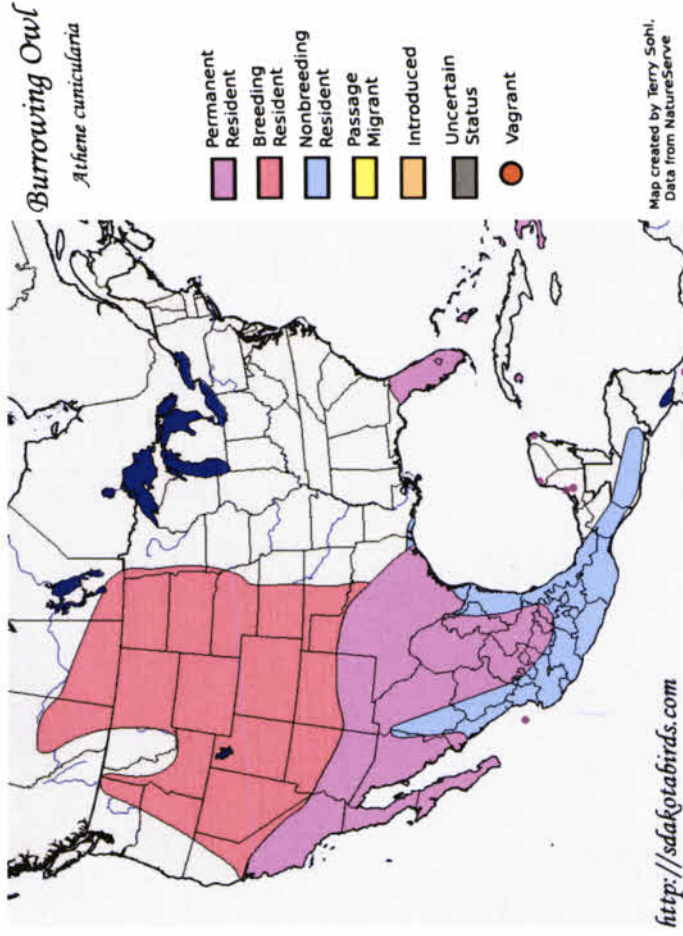


Biological Evaluation

- Special Status Species
- General Wildlife and Vegetation
- Potential Impacts
- Mitigation Measures

Irvington-East Loop Transmission Line

WESTERN BURROWING OWL



Irvington-East Loop Transmission Line

RUFOUS-WINGED SPARROW



Irvington-East Loop Transmission Line

WESTERN YELLOW BAT



2013 © Merlin D. Tuttle

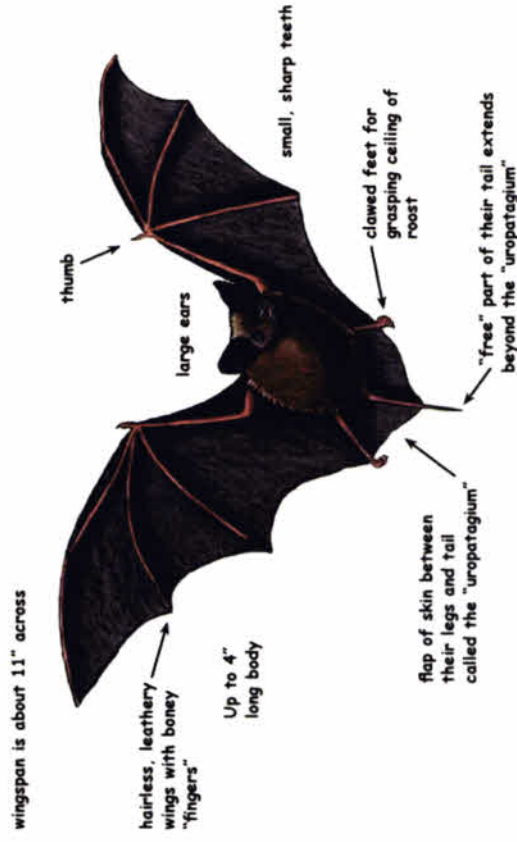


Irvington-East Loop Transmission Line

BRAZILIAN FREE-TAILED BAT



Mexican Free-tailed Bat (Brazilian Free-tailed Bat)



© Sheri Ansel

www.exploringnature.org

Irvington-East Loop Transmission Line



NON-BIOLOGICAL STUDIES

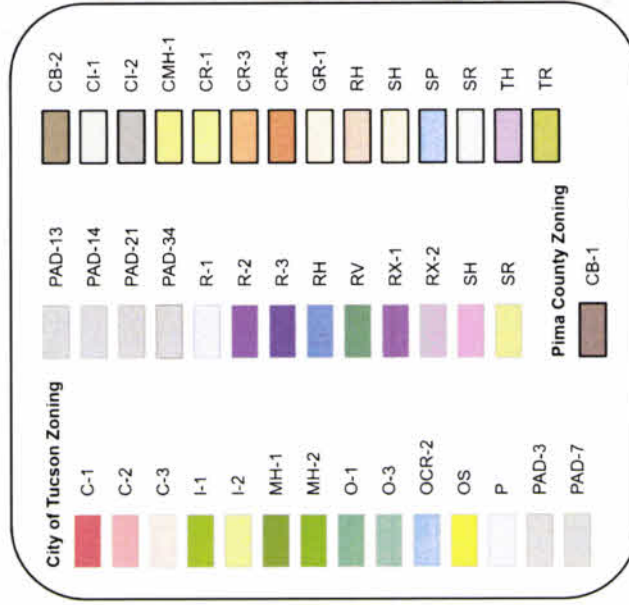
Irvington-East Loop Transmission Line



Existing & Planned Land Use

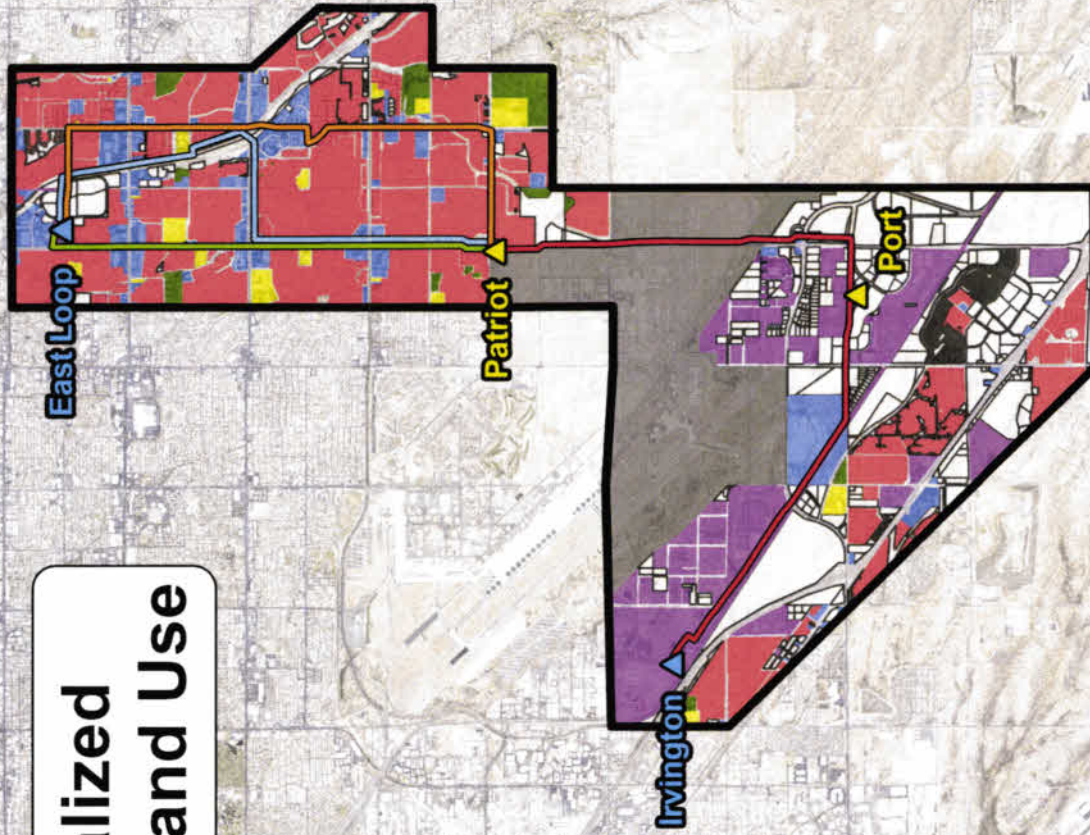
- Zoning
- Generalized Existing Land Use
- Residential Land Use
- Surface Management
- Planned & Proposed Land Use

-  Existing Substation (Project)
-  Planned Substation
-  Alternative 1 (Common Route)
-  Alternative A
-  Alternative B2 (Preferred)
-  Alternative C1 (See Note)
-  Revised Study Area



Note 1: Alternative C1 is an offset graphic representation to show common overlap alignments.

Generalized Existing Land Use



- Existing Substation (Project)
- Planned Substation
- Alternative 1 (Common Route)
- Alternative A
- Alternative B2 (Preferred)
- Alternative C1 (See Note)
- Revised Study Area

Generalized Existing Land Use

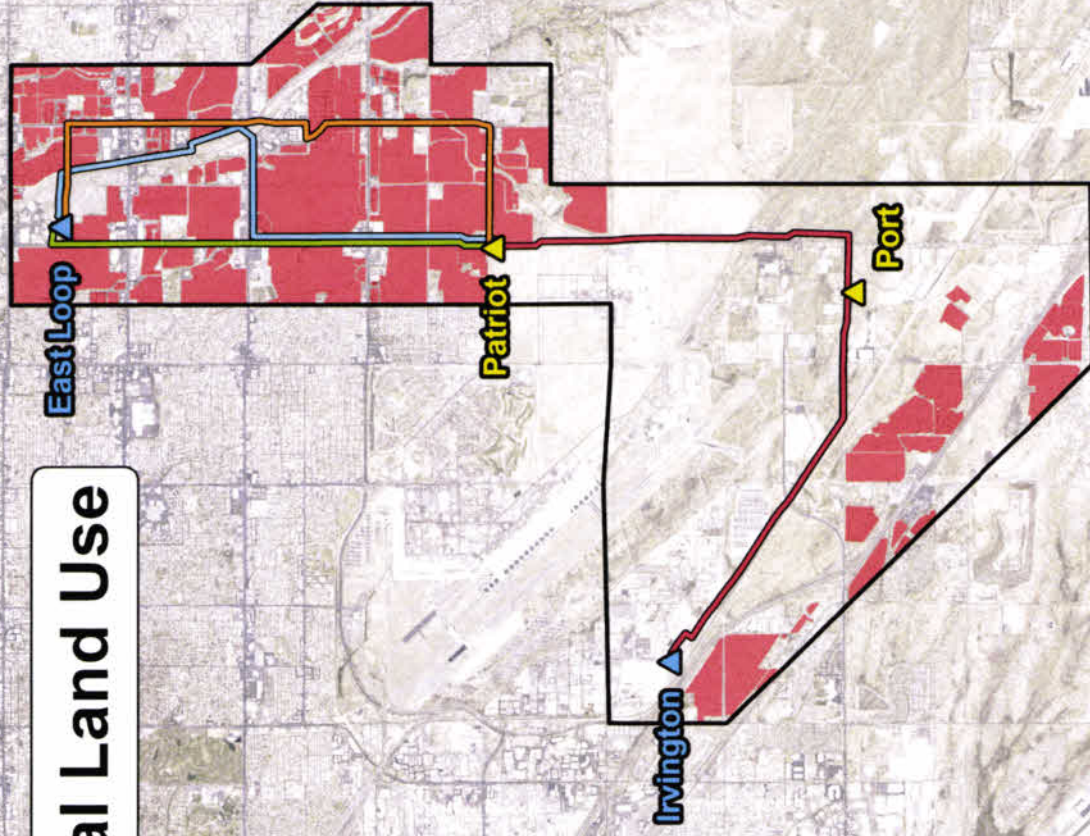
- Commercial
- Industrial
- Military
- Residential
- School
- Park
- Vacant

Note 1: Alternative C1 is an offset graphic representation to show common overlap alignments.



NOT TO SCALE

Residential Land Use



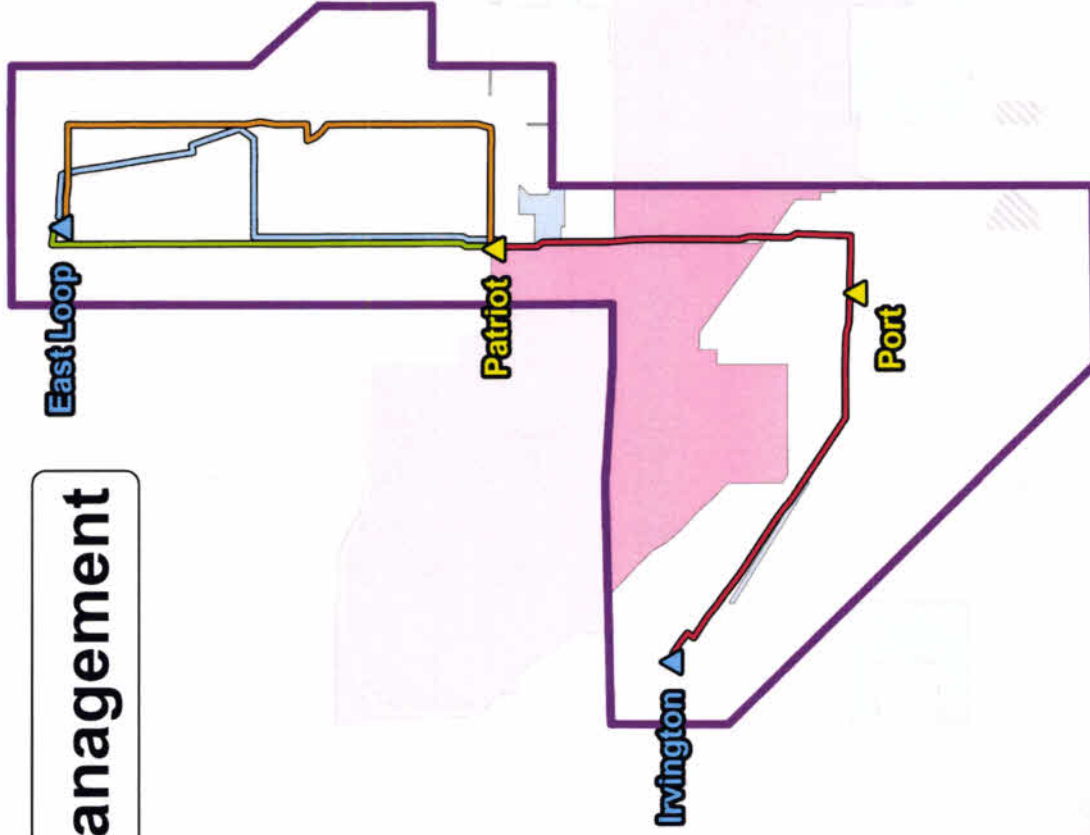
- Existing Residential Land Use
- Existing Substation (Project)
- Planned Substation
- Alternative 1 (Common Route)
- Alternative A
- Alternative B2 (Preferred)
- Alternative C1 (See Note)
- Revised Study Area

Note 1: Alternative C1 is an offset graphic representation to show common overlap alignments.



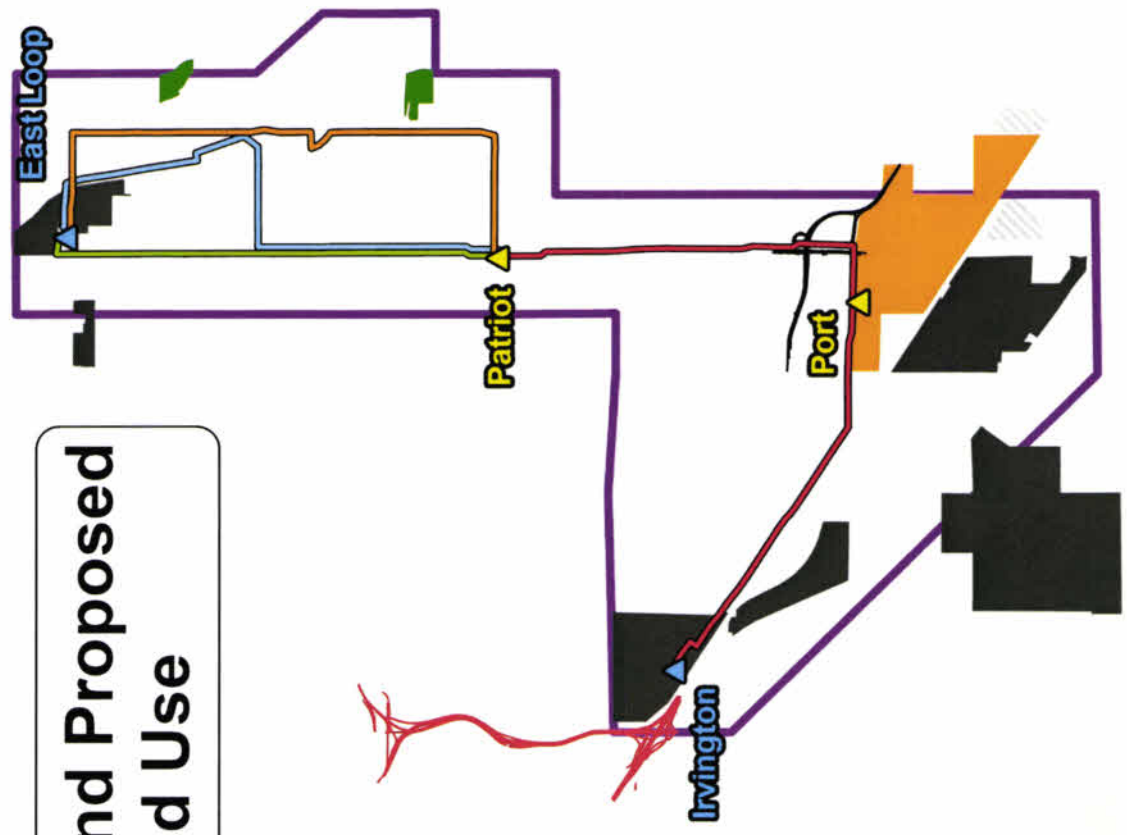
NOT TO SCALE

Surface Management



NOT TO SCALE

Planned and Proposed Land Use



▲ Existing Substation (Project)

▲ Planned Substation

— Alternative 1 (Common Route)

— Alternative A

— Alternative B2 (Preferred)

— Alternative C1 (See Note)

▭ Revised Study Area

Project Types

■ Planned Area Development (PAD)

■ Port of Tucson

■ Park Improvement

■ ADOT Improvement

— Public Improvement



Note 1: Alternative C1 is an offset graphic representation to show common overlap alignments.

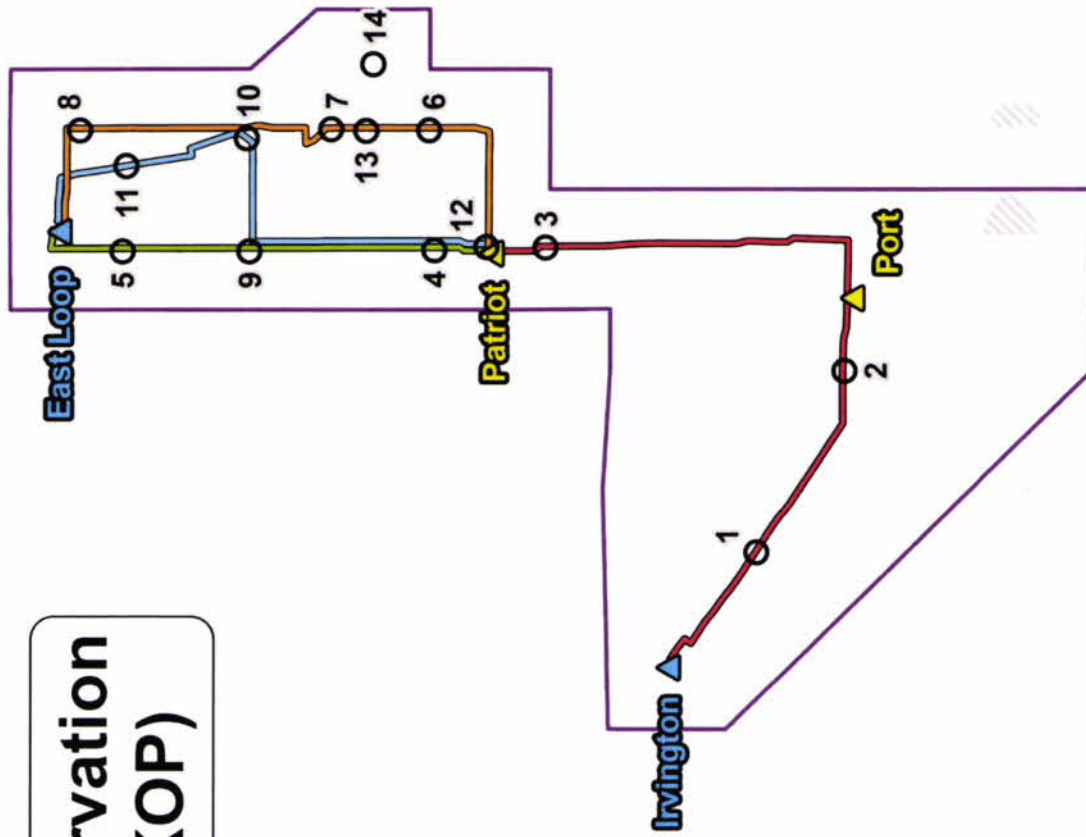
Irvington-East Loop Transmission Line



Scenic Areas/Visual Impacts

- Desktop & GIS Analysis
- Field Visit
- Visual Simulations
- Mitigation

Key Observation Point (KOP)



- Key Observation Point (KOP)
- ▲ Existing Substation (Project)
- ▲ Planned Substation
- Alternative 1 (Common Route)
- Alternative A
- Alternative B2 (Preferred)
- Alternative C1 (See Note)
- Revised Study Area

Note 1: Alternative C1 is an offset graphic representation to show common overlap alignments.



NOT TO SCALE

Irvington-East Loop Transmission Line



Historic Sites & Structures & Archaeological Sites

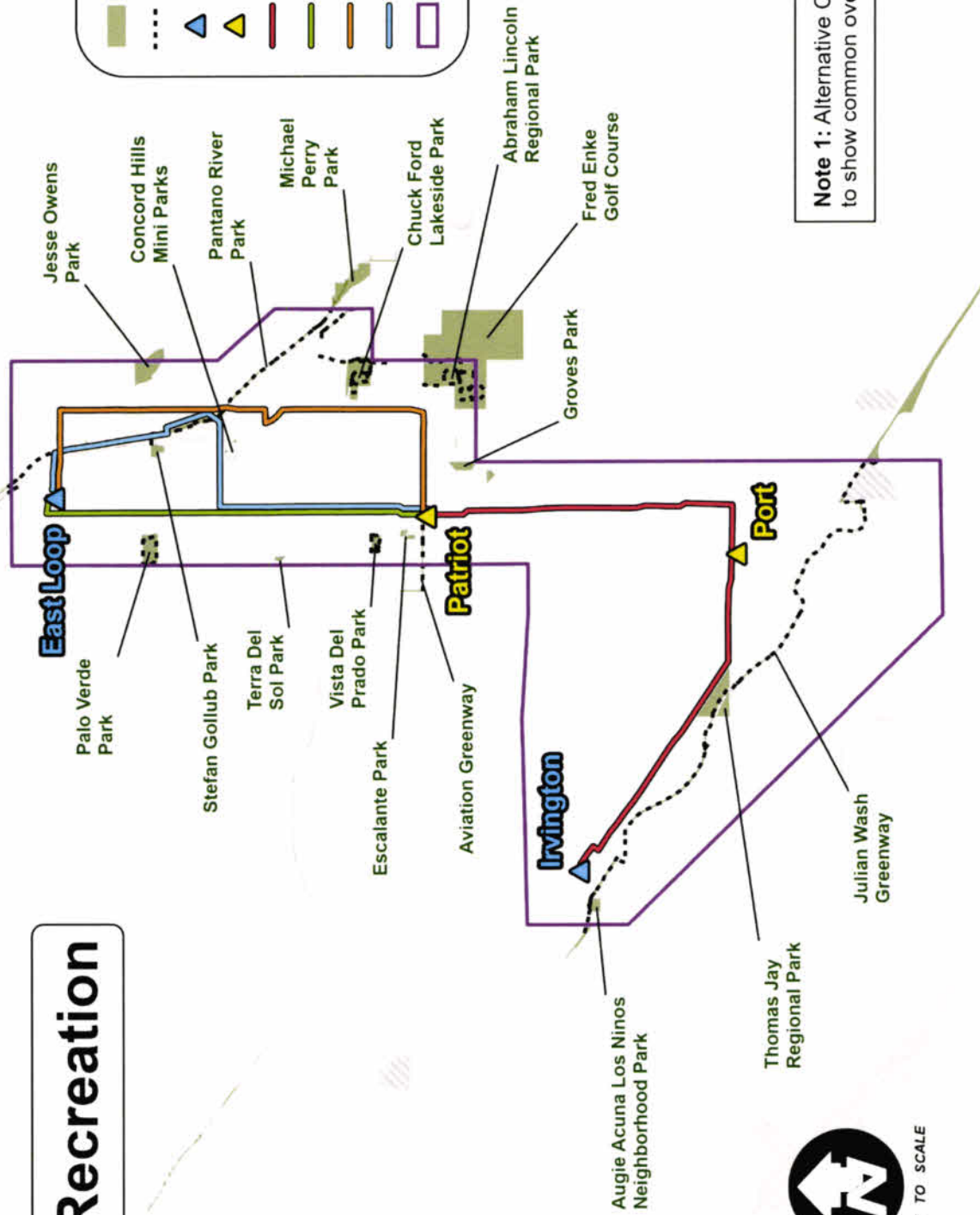
- Two known cultural sites that will be spanned.
- Class III Survey will be conducted during design.
- Develop mitigation plan if necessary.
- For eligible sites, TEP's preferred mitigation is avoidance.
- TEP will follow Arizona Revised Statutes should human remains or cultural materials be discovered during ground-disturbing activities.

Irvington-East Loop Transmission Line



This slide has been redacted

Recreation



Note 1: Alternative C1 is an offset graphic representation to show common overlap alignments.



NOT TO SCALE







Irvington-East Loop Transmission Line

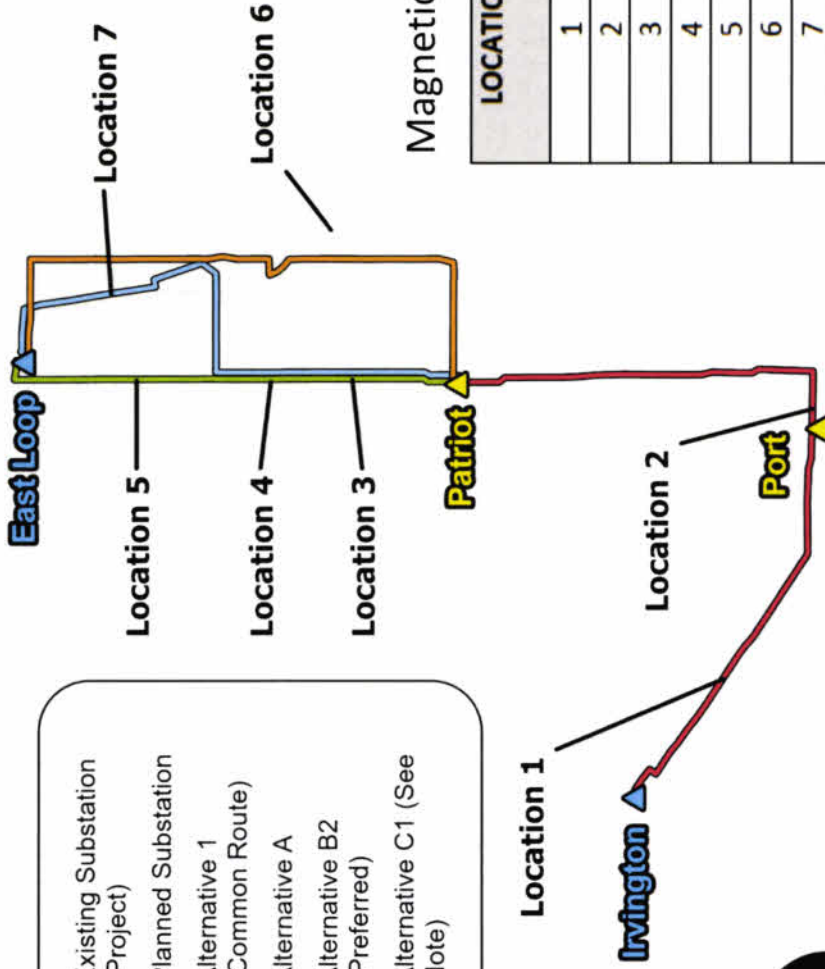


Noise

- Typical short-term construction noise
- No long-term impacts

EMF Study

-  Existing Substation (Project)
-  Planned Substation
-  Alternative 1 (Common Route)
-  Alternative A
-  Alternative B2 (Preferred)
-  Alternative C1 (See Note)



Note 1: Alternative C1 is an offset graphic representation to show common overlap alignments.



Typical Household Item Magnetic Field Values (mG)

APPLIANCE	DISTANCE FROM SOURCE (FT)		
	0.5	1	2
Baby Monitor	6	1	-
Electric Oven	9	4	-
Food Processor	30	6	2
Hair Dryer	300	1	-
Microwave Oven	200	4	10
Refrigerator	2	2	1
Video Display Terminal	14	5	2
Washing Machine	20	7	1

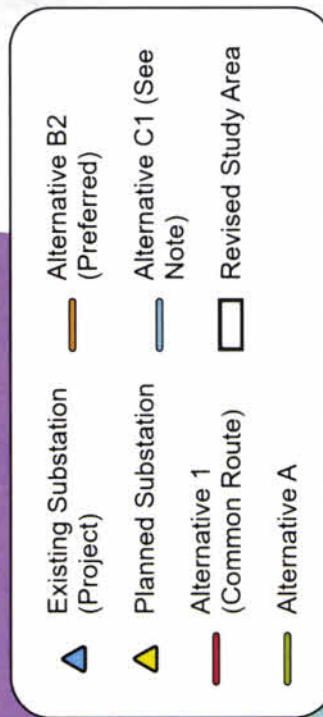
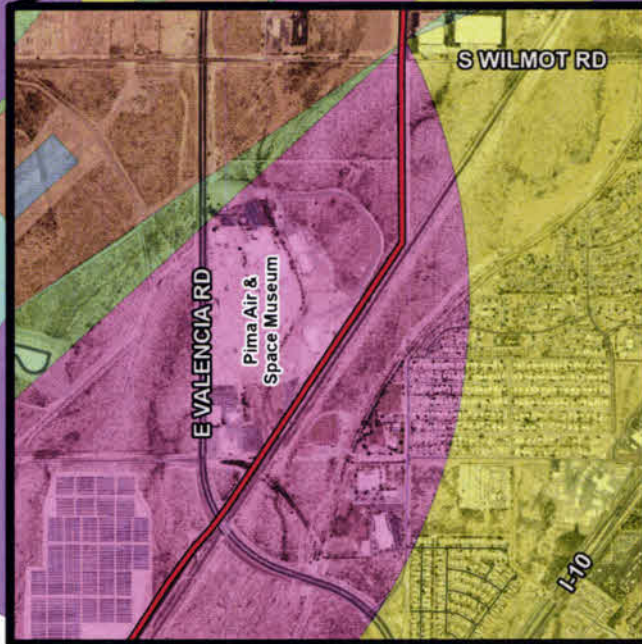
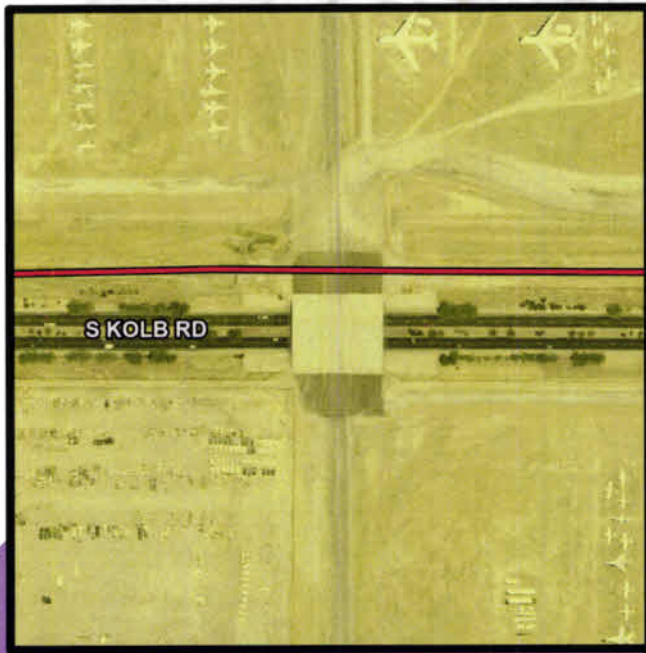
Source: National Institute of Environmental Health Sciences

Magnetic Field Values (mG) for this Project

LOCATION	VALUE AT EDGE OF ROW	MAXIMUM VALUE	DISTANCE TO <0.1 mG (FT)
1	7.3	30.2	395
2	6.9	16.4	510
3	3.3	6.9	323
4	5.6	10.7	510
5	12.1	25.5	758
6	13.3	27.8	795
7	6.4	14.1	510

FAA

Note 1: Alternative C1 is an offset graphic representation to show common overlap alignments.



NOT TO SCALE

Irvington-East Loop Transmission Line



PUBLIC & STAKEHOLDER INVOLVEMENT

Irvington-East Loop Transmission Line



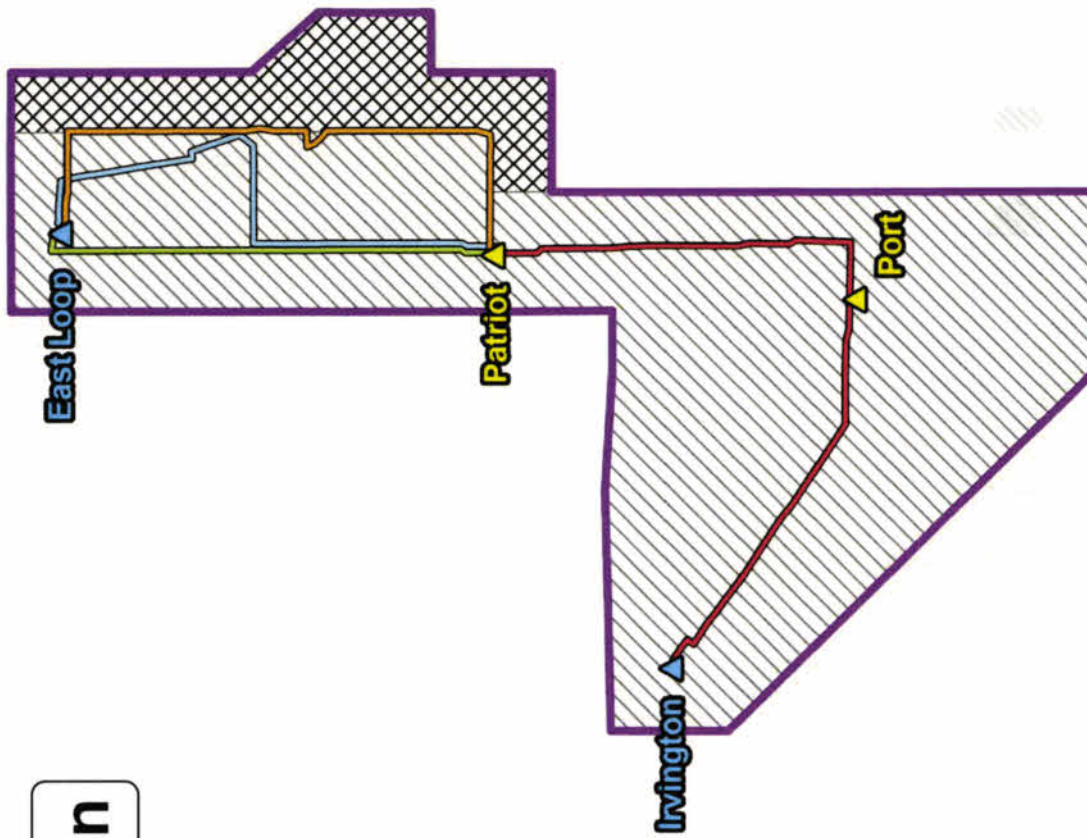
Public Involvement

- Initiated May 2019
- Meetings with stakeholders and two group meetings
- Two newsletters with comment forms to >21,700 in first mailing and >36,000 in second mailing to residents, organizations, stakeholders
- Two Public Open Houses
- Project toll-free telephone line, website, and email address
- Postcard mailed to residents and emailed to organizations & stakeholders announcing hearing

Notification



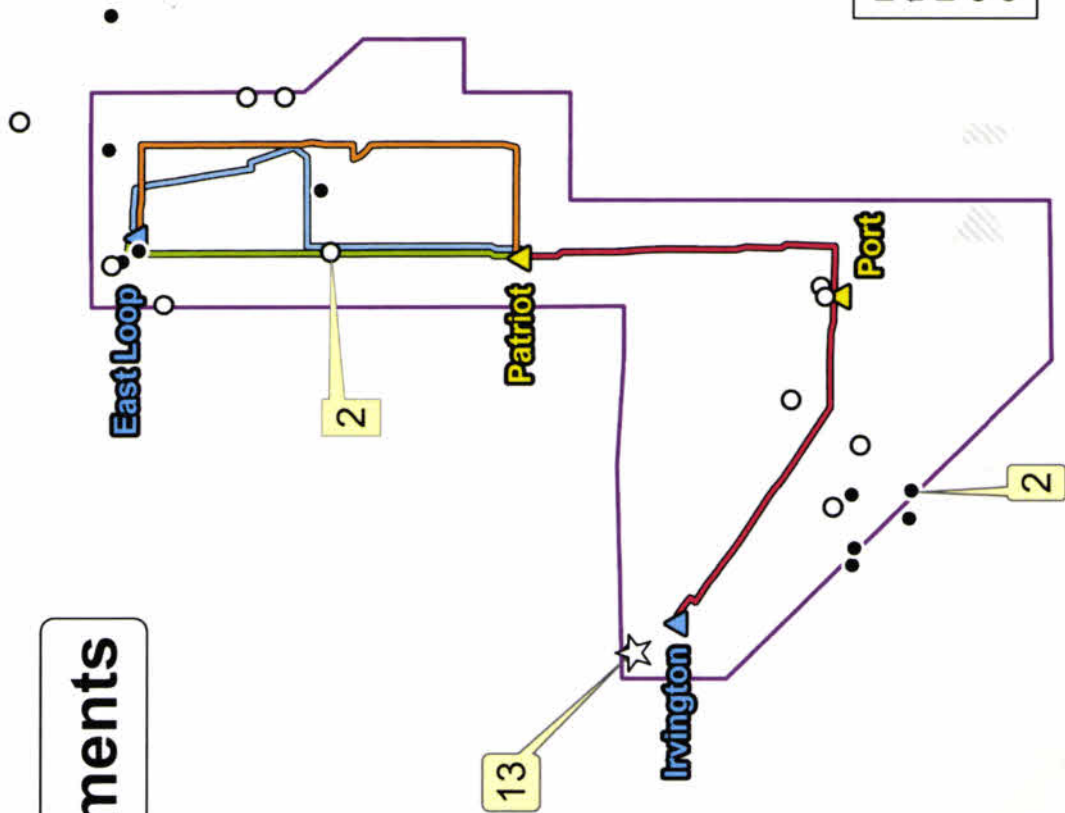
NOT TO SCALE



- Existing Substation (Project)
- Planned Substation
- Alternative 1 (Common Route)
- Alternative A
- Alternative B2 (Preferred)
- Alternative C1 (See Note)
- Revised Study Area
- Expanded Area
- Preliminary Study Area

Note 1: Alternative C1 is an offset graphic representation to show common overlap alignments.

Public Comments



- ☆ Public Comment Default Location (See Note 2)
- Public Comment Round 1
- Public Comment Round 2
- ▲ Existing Substation (Project)
- ▲ Planned Substation
- Alternative 1 (Common Route)
- Alternative A
- Alternative B2 (Preferred)
- Alternative C1 (See Note)
- Revised Study Area

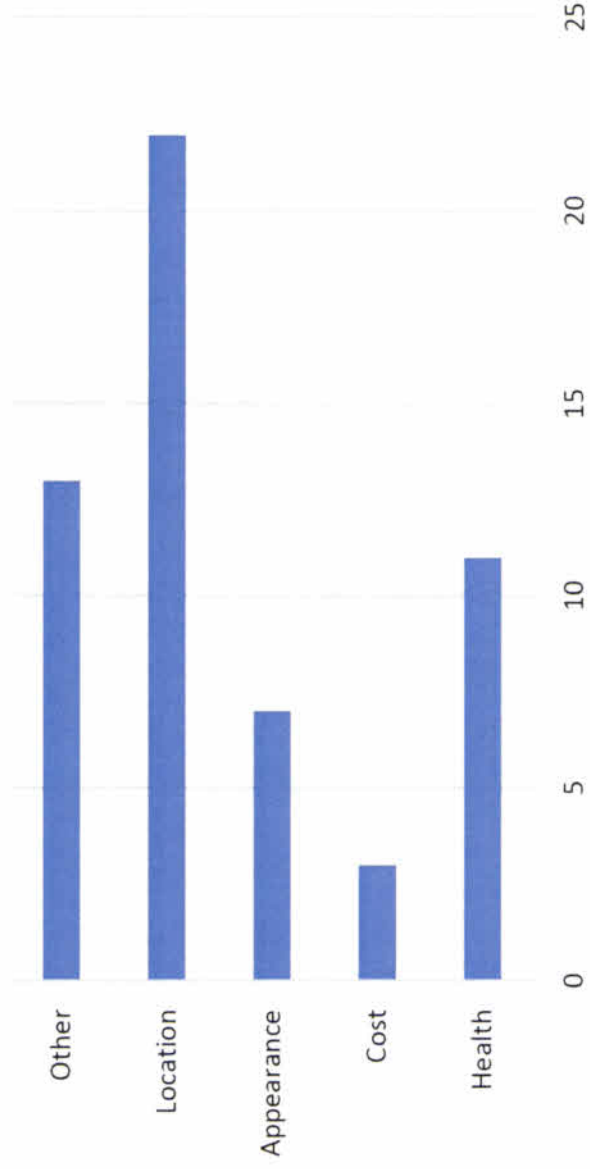
Note 1: Alternative C1 is an offset graphic representation to show common overlap alignments.

Note 2: Default Location includes public comments that either did not have an address included or the address contained an error in geocoding.

Warrington-East Loop Transmission Line



Public Comments: Areas of Concern or Interest



Irvington-East Loop Transmission Line



Stakeholder Involvement

- Representatives of Senator Sinema & Congresswoman Ann Kirkpatrick
 - Pima County
 - Pima County Regional Flood Control District
 - City of Tucson Transportation Department
- City of Tucson Ward 4
 - DMAFB
 - Kinder Morgan
 - Southwest Gas
 - Groves Lincoln Park Neighborhood Association
 - Vail Preservation Society

Irvington-East Loop Transmission Line



Stakeholder Concerns

- Pima Air and Space Museum – proximity to entrance
- Aerospace, Maintenance, and Regeneration Group – location of airplane bridge across Kolb Rd.
- Southwest Gas – high-pressure gas lines
- City of Tucson – maintaining American with Disabilities Act sidewalk access

Irvington-East Loop Transmission Line



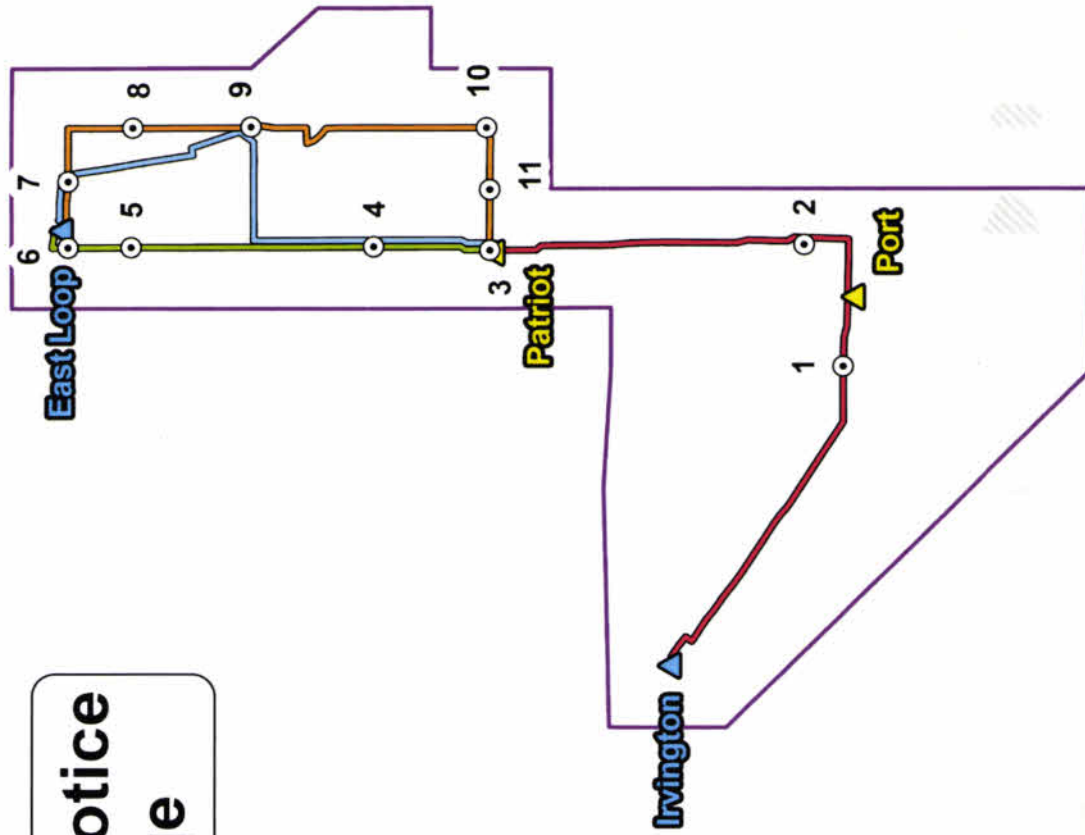
NOTICE

Irvington-East Loop Transmission Line



- Publication in the Arizona Daily Star
 - January 19, 2020
 - January 22, 2020
- Notice sent to the Affected Jurisdictions
- Copies of the Application provided to Libraries
- Notice of Hearing Signs

Hearing Notice Signage



Note 1: Alternative C1 is an offset graphic representation to show common overlap alignments.



Irvington-East Loop Transmission Line



CONCLUSIONS

Irvington-East Loop Transmission Line



- Improves system reliability
 - Adds contingency support to the existing system
 - Relieves loading on existing distribution and sub-transmission circuits
- Allows for the future retirement of aging 46 kV system
- Assists DMAFB in meeting the DOD energy resiliency directive
- Facilitates TEP's response to large service requests in Port of Tucson area

Irvington-East Loop Transmission Line



- The Project is compatible with the environment and ecology of the state of Arizona.
- Creates little to no adverse impacts on environmental factors considered by Committee
- No significant impacts on common wildlife or creation of habitat fragmentation
- No significant adverse effects on special status species
- Consistent with applicable land use plans and policies
- Will not substantially disrupt major scenic views
- Does not impair use of/or access to recreational sites
- Does not affect known historic properties, cultural resources or archaeological sites

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EXHIBIT TEP-6

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Proposed Route Tour Schedule and Map

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EXHIBIT TEP-6 –Proposed Tour Schedule and Map

Pursuant to Paragraph 19 of the Procedural Order issued by the Chairman of the Arizona Power Plant and Transmission Line Siting Committee (the “Committee”) on January 23, 2020, Tucson Electric Power Company (“TEP”) proposes the following tour schedule and route descriptions for the Project.

The Committee will travel in a chartered bus provided by TEP. One or more representatives of TEP will provide testimony and be available to answer questions at the points of interest identified below and in the map included herewith. The attached route tour map shows the tour path and identifies points of interest. Please note that all distances referenced herein are approximate and may vary slightly from those indicated.

The tour will depart from the DoubleTree Hotel, located at 445 South Alvernon Way, Tucson, AZ 85711 on **February 25th, 2020 at 9:00 a.m.**

DEPART FOR FIRST STOP #1 (6.25 mi)

9:00 a.m.

1. Proceed north (right out of parking lot) onto Alvernon Way to E. Speedway Blvd. (1.44 mi).
2. Turn east (right) onto E. Speedway Blvd. and continue to N. Finance Center Dr. (4.29 mi).
3. Turn right onto N. Finance Center Dr. Continue south to E. Rosewood St. (0.20 mi).
4. Turn left onto E. Rosewood St. and continue to N. Center Dr. (0.20 mi.).
5. Turn south (right) onto N. Center Dr. Proceed to the dead end (0.12 mi.).

STOP #1

9:15 a.m. – 9:30 a.m.

Depart bus (if requested).

Point out to the south, the existing East Loop substation and the existing transmission corridor that traverses east and west. There is an existing lattice tower alignment that has one circuit open. The existing circuits will be reconfigured so the new circuit can be placed within the appropriate bay within the substation.

DEPART FOR NEXT STOP #2 (2.75 mi)

9:30 a.m.

6. Re-board bus (if necessary). Travel north on N. Center Dr. to E. Rosewood St. (0.12 mi.) Turn north (left) onto E. Rosewood St.
7. Travel north / northwest on E. Rosewood St. to N. Finance Center Dr. (0.20 mi.) Turn north (right) onto N. Finance Center Dr.

8. Travel north on N. Finance Center Dr. to E. Speedway Blvd. (0.20 mi.). Turn East (right) onto E. Speedway Blvd.
9. Travel East on E. Speedway Blvd to N. Pantano Rd. (0.83 mi). Turn south (right) onto N. Pantano Rd.
10. Travel south on N. Pantano Rd. towards E. 22nd St. Turn right into the strip mall located on the corner of Pantanto Rd. and 22nd St. (1.40 mi.).

STOP #2

9:40 a.m. – 9:50 a.m.

Pull into the strip mall. Exit bus (if requested).

Point out the wash to the west. **Alignment C1** will run on the north side of 22nd St., cross the wash and run along the east side of the Pantano Wash. **Alignment B2 (preferred)** will continue north / south along the east side of Pantano Rd. This will be constructed as a double circuit 138-kV line with the circuit (Patriot to East Loop) and the existing circuit (Pantano to East Loop) placed on a common structure.

DEPART FOR NEXT STOP #3 (0.96 mi)

9:50 a.m.

11. Re-board bus (if necessary). Exit from the south egress point in the strip mall onto 22nd St. Turn right (west) onto 22nd St. Continue west to S. Pantano Rd. (0.20 mi.). Turn south (left) onto S. Pantano Rd.
12. Turn east (left) onto S. Research Loop (0.40 mi.). Continue around S. Research Loop to S. Pantano Rd.
13. Turn south (left) onto S. Pantano Rd. Continue south to stop 3. (0.36 mi.). Pull to the side of the road.

STOP #3

10:00 a.m. – 10:10 a.m.

Pull to the west side of the road. Exit bus (if requested).

Point out existing Pantano – East Loop 138-kV transmission line that runs north/south. **Alternative B2 (preferred)** will utilize the existing 138-kV transmission corridor and will be constructed as a double circuit 138-kV transmission line with the new line and existing Pantano – East Loop lines placed on the common monopole. This will allow TEP to remove the line from the area where homes have encroached upon the existing 138-kV transmission line.

DEPART FOR NEXT STOP #4 (1.38 mi)

10:10 a.m.

14. Re-board bus (if necessary). Continue south on S. Pantano Rd and turn west (right) onto E. Escalante Rd. (1.33 mi.).
15. Turn right onto the Carson Ave. (0.10 mi.). Continue north on Carson Ave. to the cul-de-sac (0.10 mi.). Make a U-turn. Drive south on Carson Ave to the intersection of Escalante and Carson Rd (0.10 mi).

STOP #4

10:20 – 10:30a.m.

Exit bus (if requested).

Note the existing Los Reales – Pantano 138-kV transmission line. **Alternative B2 (preferred)** will utilize the existing 138-kV transmission corridor and will be constructed as a double circuit 138-kV transmission line with the new line and existing Los Reales - Pantano lines placed on the common monopole.

DEPART FOR NEXT STOP #5 (0.92 mi)

10:30 a.m.

16. Re-board bus (if necessary). Turn west (right) at Escalante Rd. Continue west to the intersection of Kolb and Escalante Rds. (0.92 mi.). Turn North (right) into the existing gas station parking lot on the northeast corner of the intersection.

STOP #5

10:35 a.m. – 10:50 a.m.

Exit bus (if requested).

Note that the Patriot Substation will be located on the southwest corner of Kolb and E. Escalante Rds. on an approximately 16-acre parcel. **Alternative A** departs from the substation and proceeds north along the west side of Kolb Rd. for approximately 0.25 mi. where it then crosses and continues north along on the east side of Kolb Rd. **Alternative B2 (preferred)** departs from the substation and proceeds east on the south side of E. Escalante Rd.

DEPART FOR NEXT STOP #6 (11.90 mi)

10:50 a.m.

17. Make a right onto Kolb Rd. Travel south along Kolb Rd. to E. Littletown Rd. (0.65 mi).
18. Turn west (right) onto E. Littletown Rd. Continue west to the intersection of E. Littletown and S. Wilmot Rds. (1.0 mi.).
19. Pull across Wilmot Rd. into the dirt parking area.

STOP #6

11:15 a.m. – 11:30 a.m.

Exit bus (if requested).

Note that **Alternative 1** (common to all routes) will travel in an east / west direction along the north side of the road. The distribution in this area will be undergrounded where necessary. The future 13-kV Port substation will be located approximately 0.5 mi. east of the intersection.

Note solar yard on east side of I-10 (E-ON)

DEPART FOR DOUBLETREE HOTEL (8.35 mi)

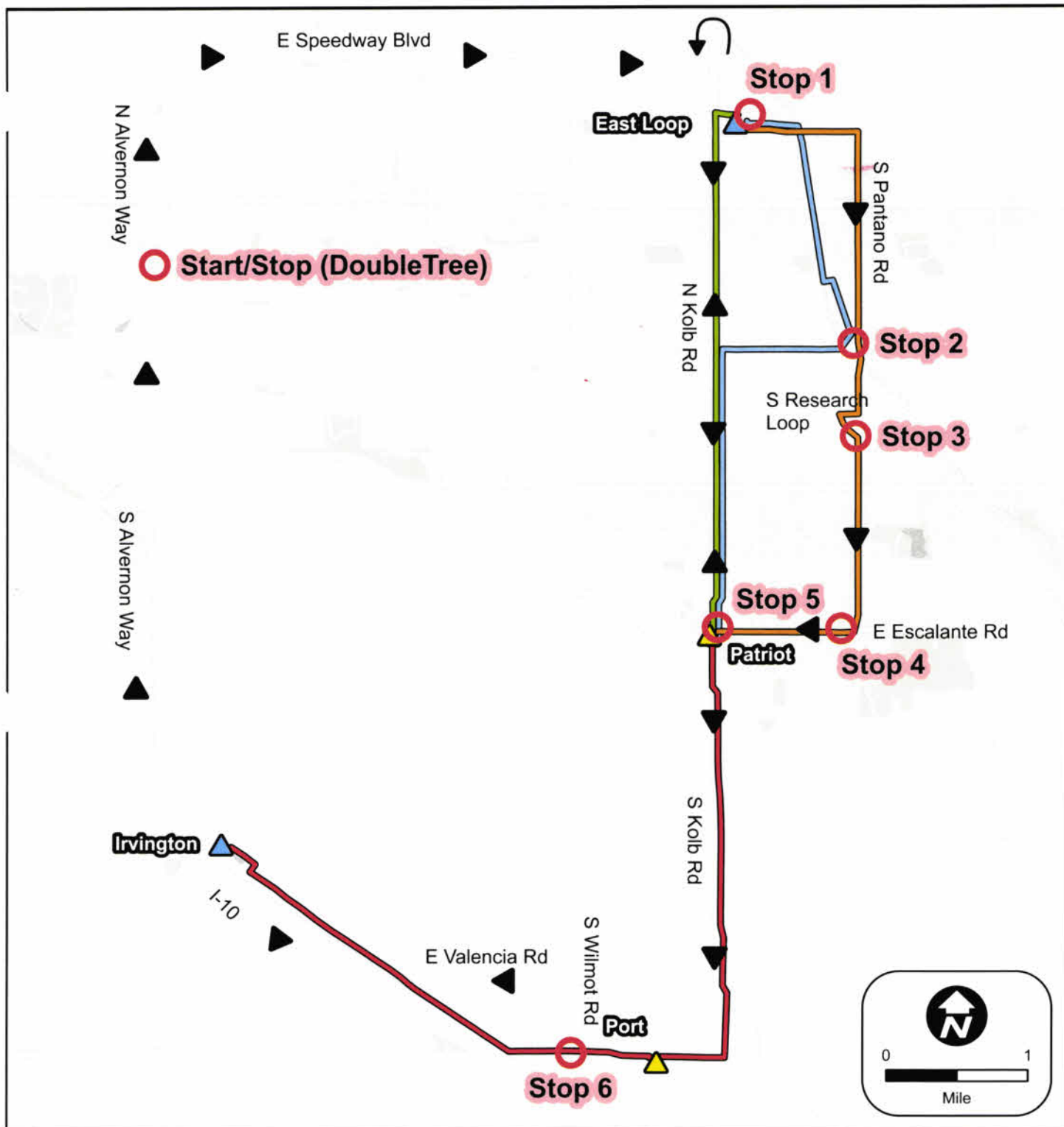
11:30 – 11:45 p.m.

1. Re-board bus (if necessary). Travel north to the intersection of S. Wilmot and E. Valencia Rds. (0.5 mi.).
2. Turn west (left) onto E. Valencia Rd. Continue on E. Valencia Rd. to Interstate 10 west (I-10-W) (1.95 mi.).
3. Merge onto I-10-W and continue west to the Alvernon Rd. exit (exit 265) (1.90 mi.). Exit at the Alvernon Rd. exit
4. Continue north on Alvernon Rd. to the Doubletree Hotel (4.0 mi.).

END TOUR

Approximately **12:00 p.m.**

Return to DoubleTree Hotel.



Irvington to East Loop 138 kV Transmission Line Project

Tour

- | | | |
|-------------------------------|--------------------|----------------------------|
| Tour Stop | Planned Substation | Alternative A |
| Existing Substation (Project) | Alternative 1 | Alternative B2 (Preferred) |
| | | Alternative C1 (See Note) |

TEP
Tucson Electric Power
Land Resources

Sources: Esri, UNS, TEP, BLM, and Pima County GIS.
Projection: NAD 1983 UTM Zone 12N
Basemap: Esri World Topographic Map

This map is for planning purposes only. TEP and UNS Energy make no warranty of its accuracy.

Note: Alternative C1 is an offset graphic representation to show common overlap alignments.

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EXHIBIT TEP-7

Affidavits of Publication and Tear Sheets

ARIZONA DAILY STAR

Tucson, Arizona

STATE OF ARIZONA)
COUNTY OF PIMA)

Debbie Sanchez, being first duly sworn deposes and says: that she is the Advertising Representative of **TNI PARTNERS**, a General Partnership organized and existing under the laws of the State of Arizona, and that it prints and publishes the Arizona Daily Star, a daily newspaper printed in Phoenix, AZ and published in the City of Tucson, Pima County, State of Arizona, and having a general circulation in said City, County, State and Cochise and Santa Cruz Counties, and that the attached ad was printed and

Legal Notice

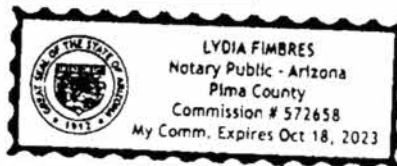
published correctly in the entire issue of the said Arizona Daily Star on each of the following dates, to-wit:

JANUARY 19 & 22, 2020

Debbie Sanchez

Subscribed and sworn to before me this 21st day of
January 2020

Lydia Fimbres
Notary Public



My commission expires _____

AD NO. TUC0011181

GARBAGE, OTHER SERVICES AFFECTED BY MARTIN LUTHER KING JR. DAY**CITY GARBAGE AND RECYCLING**

The city of Tucson will not collect garbage and recycling Monday, which is Martin Luther King Jr. Day. Services scheduled for Monday will be delayed a day, as will the rest of the week's collections. For information, call Environmental Services at 791-3171 or go to www.tucsonaz.gov/esd. The Los Rios Landfill will be open Monday. For landfill information, call 791-5151.

COUNTY GARBAGE AND RECYCLING

All county landfills and transfer stations will be open Monday. This includes the Ajo and Sahuarita landfills, and the Ryan Airfield and Catalina transfer stations. For information, call 623-7300. For recycling or waste collection in Pima County, call your company to confirm the schedule. Waste Management will have its regular collection Monday.

OTHER SERVICES

• City, county, state and

federal offices will be closed Monday.

BUS TRANSPORTATION

• Sun Tran buses, Sun Link streetcar, Sun Van and the Sun Shuttle will operate on a regular schedule Monday. For information, call 792-9222 or go to www.suntran.com.

POST OFFICES

• Closed Monday.

LIBRARIES

• Pima County public libraries will be closed Monday; return

chutes will be open. Online resources available at www.library.pima.gov.

BANKS

• Most closed Monday.

SCHOOL DISTRICTS

• No classes Monday.

UA, PCC

• No classes Monday.

MOTOR VEHICLE DIVISION

• Closed Monday.

EMISSIONS

• Stations open Monday.



RELLY PRESNELL / ARIZONA DAILY STAR
The SunLink streetcar and Sun Tran buses will operate on regular schedules on Monday, Jan. 20.

BEFORE THE ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

In the matter of the Application of Tucson Electric Power Company, in conformance with the requirements of A.R.S. § 40-360, et seq., for a Certificate of Environmental Compatibility authorizing the Irvington to East Loop 138 kilovolt (kV) Transmission Line Project, which includes the construction of new 138 kV transmission lines originating at the Irvington Substation (Section 03, Township 15 South, Range 14 East), with an interconnection at the Port Substation (Section 18, Township 15 South, Range 15 East) and the Patriot Substation (Section 31, Township 14 South, Range 15 East), and terminating at the East Loop Substation (Section 08, Township 14 South, Range 15 East), each located within Pima County, Arizona.

Docket No.
L-00000C-20-3337-00186
Case No. 186

NOTICE OF HEARING

A PUBLIC HEARING WILL BE HELD before the Arizona Power Plant and Transmission Line Siting Committee ("Committee") regarding the application of Tucson Electric Power Company ("TEP" or "Applicant") for a Certificate of Environmental Compatibility ("CEC") authorizing the construction of the Irvington to East Loop 138 kilovolt ("kV") Transmission Line Project ("Project") in Pima County, Arizona.

The Project will consist of building a new 138 kV transmission line totaling approximately 11 to 13 miles in length, depending on the alternative approved, to connect the existing Irvington Substation to the existing East Loop Substation. The Project will interconnect to the planned Port 138 kV Substation and to the planned Patriot 138 kV Substation. The Project will cross private, City of Tucson ("COT"), and Pima County-owned land, as well as COT and Pima County road right-of-way ("ROW"). A map of the Project is attached as Exhibit A.

The hearing will commence at the Doubletree Hotel, 445 S. Alvernon Way, Tucson, AZ 85711, on Monday, February 24, 2020 at 1:00 p.m. The hearing will continue on Tuesday, February 25, 2020 through Friday, February 28, 2020 as necessary, beginning at 9:00 a.m. on each day, unless a tour is taken. If a tour is taken, it will begin on Tuesday, February 25, 2020 at 9:00 a.m. or an alternative date and time set by the Chairman of the Committee ("Chairman").

Any revisions to the hearing schedule, if necessary, will be noticed on the Applicant's and Arizona Corporation Commission's ("ACC") websites.

- TEP's Project Website is: <https://www.tep.com/irvington-east-loop/>
- The ACC website is: <https://www.azcc.gov/arizona-power-plant/meeting-schedule>

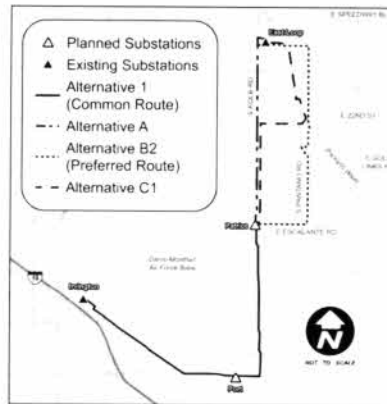
PUBLIC COMMENT WILL BE TAKEN IN A SPECIAL EVENING SESSION ON MONDAY, FEBRUARY 24, 2020 BEGINNING AT 5:30 P.M., AT THE DOUBLETREE HOTEL. PUBLIC COMMENT ALSO MAY BE TAKEN AT THE BEGINNING OF EACH HEARING DAY OR AT OTHER TIMES DURING THE HEARING, AT THE DISCRETION OF THE CHAIRMAN.

The Chairman may, at his discretion, recess the hearing to a time and place to be announced during the hearing, or to be determined after the recess. The date, time, and place at which the hearing will be resumed will be posted on the above-noted TEP Project website and the ACC website. **NOTE: NOTICE OF ANY RESUMED HEARING WILL BE GIVEN; HOWEVER, PUBLISHED NOTICE OF SUCH A RESUMED HEARING IS NOT REQUIRED.**

The Committee may conduct a tour of the Project area. The map and itinerary of any such tour will be available at the hearing and posted on the Project website. Members of the public may follow the Committee on the tour. During the tour, the Committee may hear testimony at stops on the tour concerning where the stops are located, what is visible at the stops, and the relevance of the location and view to the Application and Project. No other discussion or deliberation concerning the Application will occur during the tour. A court reporter or recording device will record any testimony taken on the tour for transcription.

Maps and detailed information about the Project are contained in the Application, which is available for inspection at the following locations:

- ACC Docket Control Center, Phoenix Office, 1200 West Washington Street, Suite 108, Phoenix, AZ 85007
- ACC Tucson Office, 400 West Congress Street #221, Tucson, AZ 85701



- Murphy-Wilmot Library, 530 North Wilmot Road, Tucson, AZ 85710
 - Eckstrom-Columbus Library, 4350 East 22nd Street, Tucson, AZ 85711
 - Joel D. Valdez Main Library, 101 North Stone Avenue, Tucson AZ 85701
 - The Project website: <https://www.tep.com/irvington-east-loop/>
- Applicant will make available final copies of the pre-filing meeting, prehearing conference, and hearing transcripts at each of the above locations and website.

Each county, municipal government, and state agency interested in the Project that desires to be a party to the proceedings shall, not less than ten (10) days before Monday, February 24, 2020, file a Notice of Intent to Become a Party with the Director of Utilities, ACC, 1200 West Washington Street, Phoenix, AZ 85007.

Any domestic non-profit corporation or association formed in whole or in part to promote conservation or natural beauty; to protect the environment, personal health or other biological values; to preserve historical sites; to promote consumer interests; to represent commercial and industrial groups; or to promote the orderly development of the area in which the Project is located that desires to become a party to the proceedings shall, not less than ten (10) days before Monday, February 24, 2020, file a Notice of Intent to Become a Party with the Director of Utilities, ACC, 1200 West Washington Street, Phoenix, AZ 85007.

The Committee or the Chairman, at any time deemed appropriate, may deem other persons as parties to the proceedings. Any person may make a limited appearance at a hearing by filing a statement in writing with the Director of Utilities, ACC, 1200 West Washington Street, Phoenix, AZ 85007, not less than five (5) days before Monday, February 24, 2020. A person making a limited appearance will not be a party or have the right to present testimony or cross-examine witnesses.

This proceeding is governed by Arizona Revised Statutes ("A.R.S.") §§ 40-360 to 40-360.13 and Arizona Administrative Code Rules R14-3-201 to R14-3-220. No substantive communication not in the public record may be made to any member of the Committee. The written decision of the Committee will be submitted to the ACC pursuant to A.R.S. § 40-360.07. Any person intending to be a party to the proceeding on the matter before the ACC must be a party to the proceedings before the Committee.

ORDERED this 15th day of January, 2020.

/s/ Thomas K. Chenail, Chairman
Arizona Power Plant and
Transmission Line Siting Committee
Office of the Arizona Attorney General



Tucson Electric Power

ARIZONA DAILY STAR

Tucson, Arizona

STATE OF ARIZONA)
COUNTY OF PIMA)

Debbie Sanchez being first duly sworn deposes and says that she is the Advertising Representative of **TNI PARTNERS**, a General Partnership organized and existing under the laws of the State of Arizona, and that it prints and publishes the Arizona Daily Star, a daily newspaper printed in Phoenix, AZ and published in the City of Tucson, Pima County, State of Arizona, and having a general circulation in said City, County, State and Cochise and Santa Cruz Counties, and that the attached ad was printed and

Legal Notice

published correctly in the entire issue of the said Arizona Daily Star on each of the following dates, to-wit

JANUARY 19 & 22, 2020

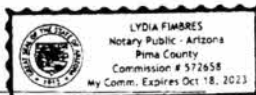
Debbie Sanchez

Subscribed and sworn to before me this 22nd day of

January 2020

Lydia Fimbres
Notary Public

My commission expires



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What you need to know as the 2020 Census kicks off in Alaska

ANCHORAGE, Alaska — The 2020 Census kicked off Tuesday in remote Alaska, the Bering Sea community of Toksook Bay.

WHY IS THE 2020 CENSUS STARTING IN ALASKA?

With its sparse population and subzero temperatures, rural Alaska can be hard to reach, and some of its villages are accessible only when the ground is frozen.

So, the Census Bureau starts the head count in the

Last Frontier state by going door-to-door in January — more than two months before the rest of the nation — so it can make sure it reaches villages before the spring thaw, when residents head out to fish and hunt.

WHEN DOES IT START ELSEWHERE?

Residents in the rest of the U.S., as well as the rest of Alaska, can start responding online and by telephone in mid-March. The Census Bureau plans to send out a first round of

WILL MY INFO BE SHARED?

No. Under federal law, all responses are kept completely confidential.

WHAT ARE THE QUESTIONS?

The form asks how many people live in the household

as of April 1, whether the home is owned or rented, and the form-filler's age, race and sex. It also asks if the form-filler is Latino, and if so, their country of origin.

IS THERE A CITIZENSHIP QUESTION?

No. The Trump administration tried to add the question, but the U.S. Supreme Court blocked it.

WHO GETS COUNTED?

Everyone residing in the United States and the five U.S. territories, including

non-citizens and immigrants living in the country illegally. Also included are military personnel temporarily deployed overseas.

WHY SHOULD I CARE ABOUT THE CENSUS?

Because it is used to determine who your representative in Congress is, where new businesses can build, how crowded your local schools will get, and whether highways in your community get money for repairs. The results of the 2020 census help determine

the distribution of \$1.5 trillion in federal spending, as well as how many congressional seats each state gets.

SELL YOUR TUCSON HOUSE NOW!

No Fees, No Commissions
Put More Cash in Your Pocket
Easy House Offer NOW!

WWW.CASH4MYTUCSONHOME.COM

So Much Exposure

\$20-200-8727

BEFORE THE ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

In the matter of the Application of Tucson Electric Power Company, in conformance with the requirements of A.R.S. § 40-360, et seq., for a Certificate of Environmental Compatibility authorizing the Irvington to East Loop 138 kilovolt (kV) Transmission Line Project, which includes the construction of new 138 kV transmission lines originating at the Irvington Substation (Section 03, Township 15 South, Range 14 East), with an interconnection at the Port Substation (Section 18, Township 15 South, Range 15 East) and the Patriot Substation (Section 31, Township 14 South, Range 15 East), and terminating at the East Loop Substation (Section 08, Township 14 South, Range 15 East), each located within Pima County, Arizona.

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ORDERED this 15th day of January, 2020.

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Arizona Power Plant and
Transmission Line Siting Committee
Office of the Arizona Attorney General



Tucson Electric Power

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EXHIBIT TEP-8

Proof of Posting

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EXHIBIT TEP-8A
Hearing Notice Sign Location Map



Irvington to East Loop 138 kV Transmission Line Project

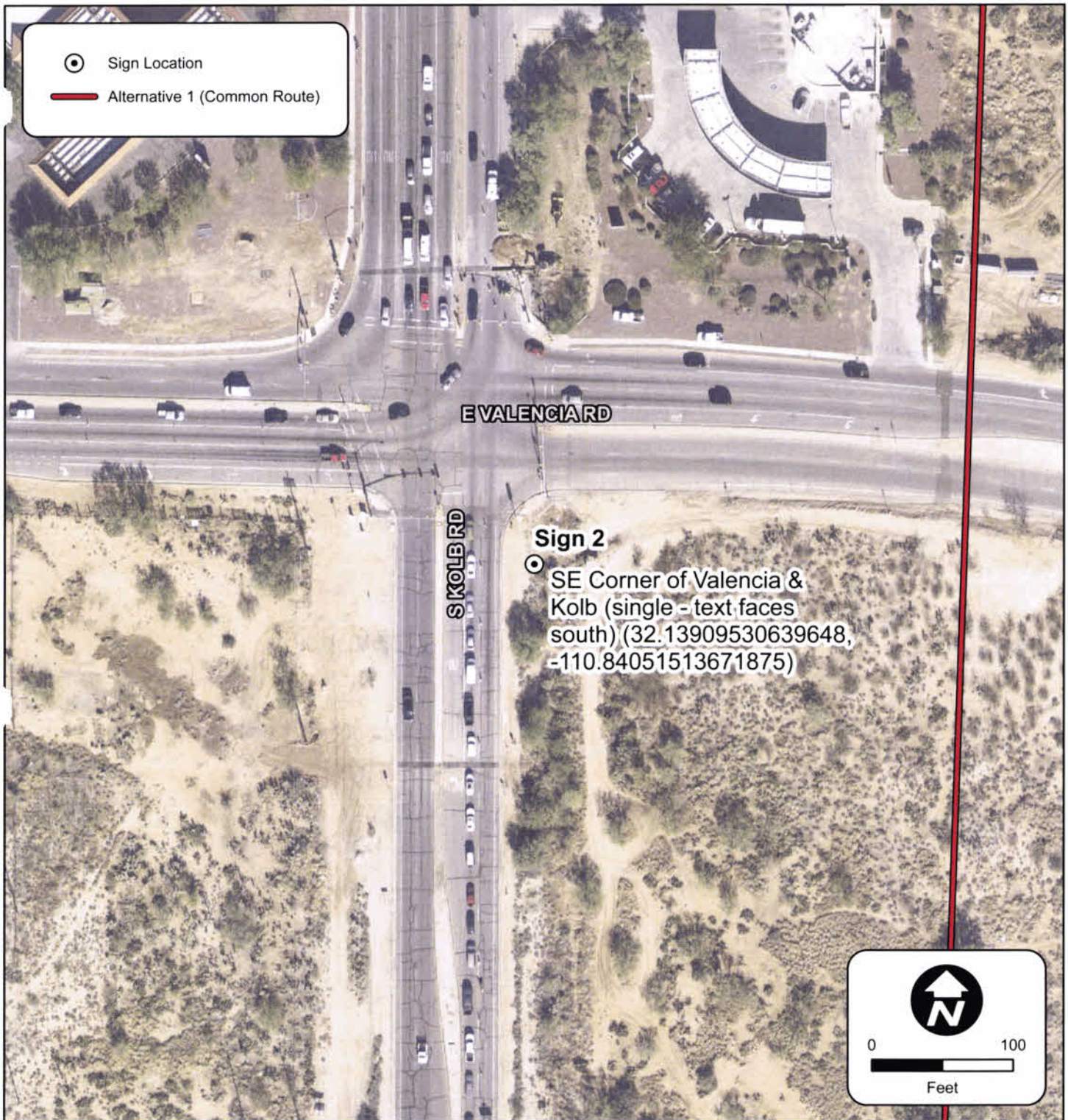
Proof of Posting Signage (Map 1 of 11)

Note: Alternative C1 is an offset graphic representation to show common overlap alignments.

TEP
Tucson Electric Power
Land Resources

Sources: Esri and UNS Energy.
Projection: NAD 1983 UTM Zone 12N
Basemap: PAG Imagery 2017

This map is for planning purposes only. TEP and UNS Energy make no warranty of its accuracy.



Irvington to East Loop 138 kV Transmission Line Project

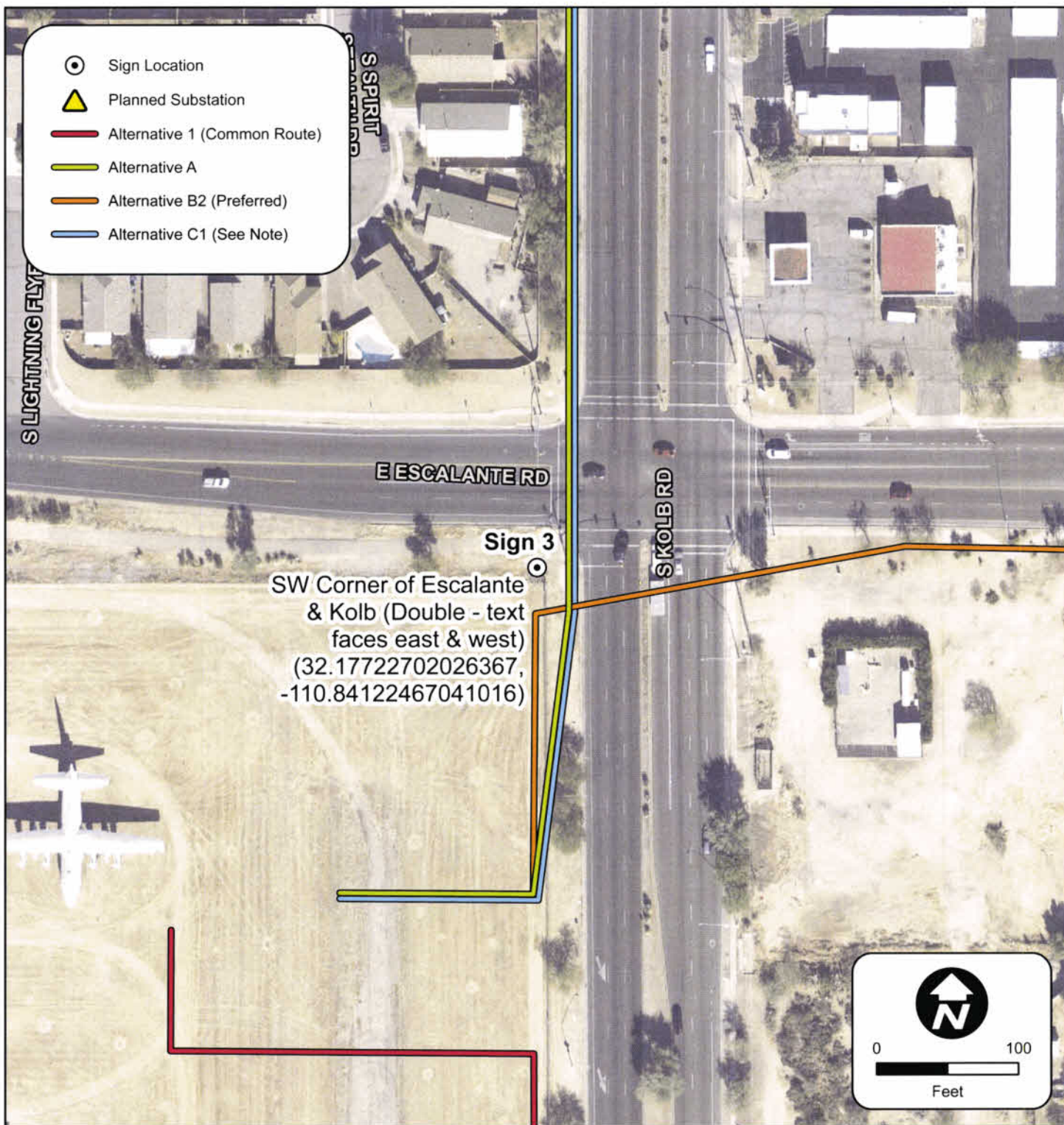
Proof of Posting Signage (Map 2 of 11)

TEP
Tucson Electric Power
Land Resources

Sources: Esri and UNS Energy.
Projection: NAD 1983 UTM Zone 12N
Basemap: PAG Imagery 2017

Note: Alternative C1 is an offset graphic representation to show common overlap alignments.

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Irvington to East Loop 138 kV Transmission Line Project

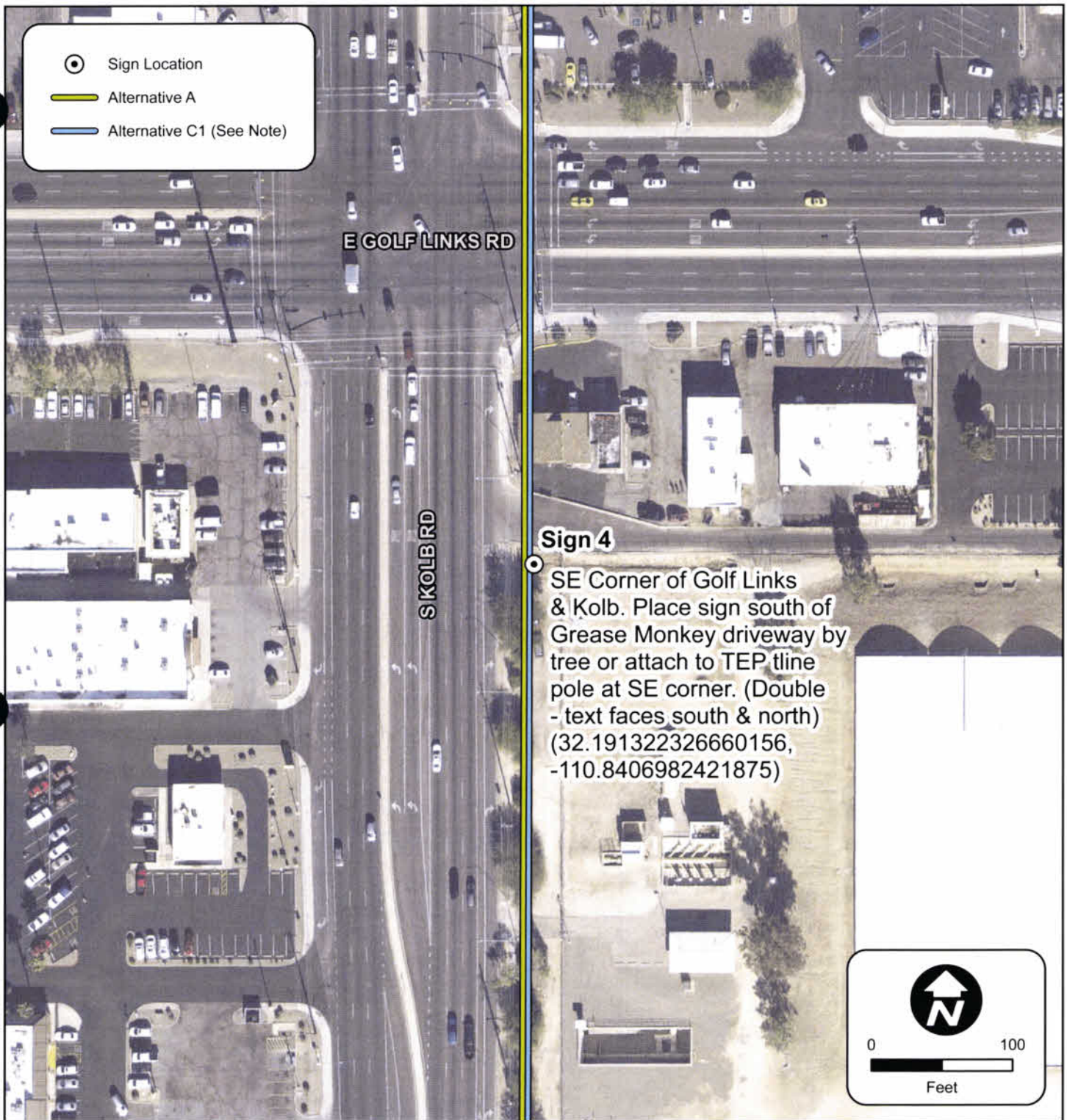
Proof of Posting Signage (Map 3 of 11)



Sources: Esri and UNS Energy.
Projection: NAD 1983 UTM Zone 12N
Basemap: PAG Imagery 2017

Note: Alternative C1 is an offset graphic representation to show common overlap alignments.

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Irvington to East Loop 138 kV Transmission Line Project

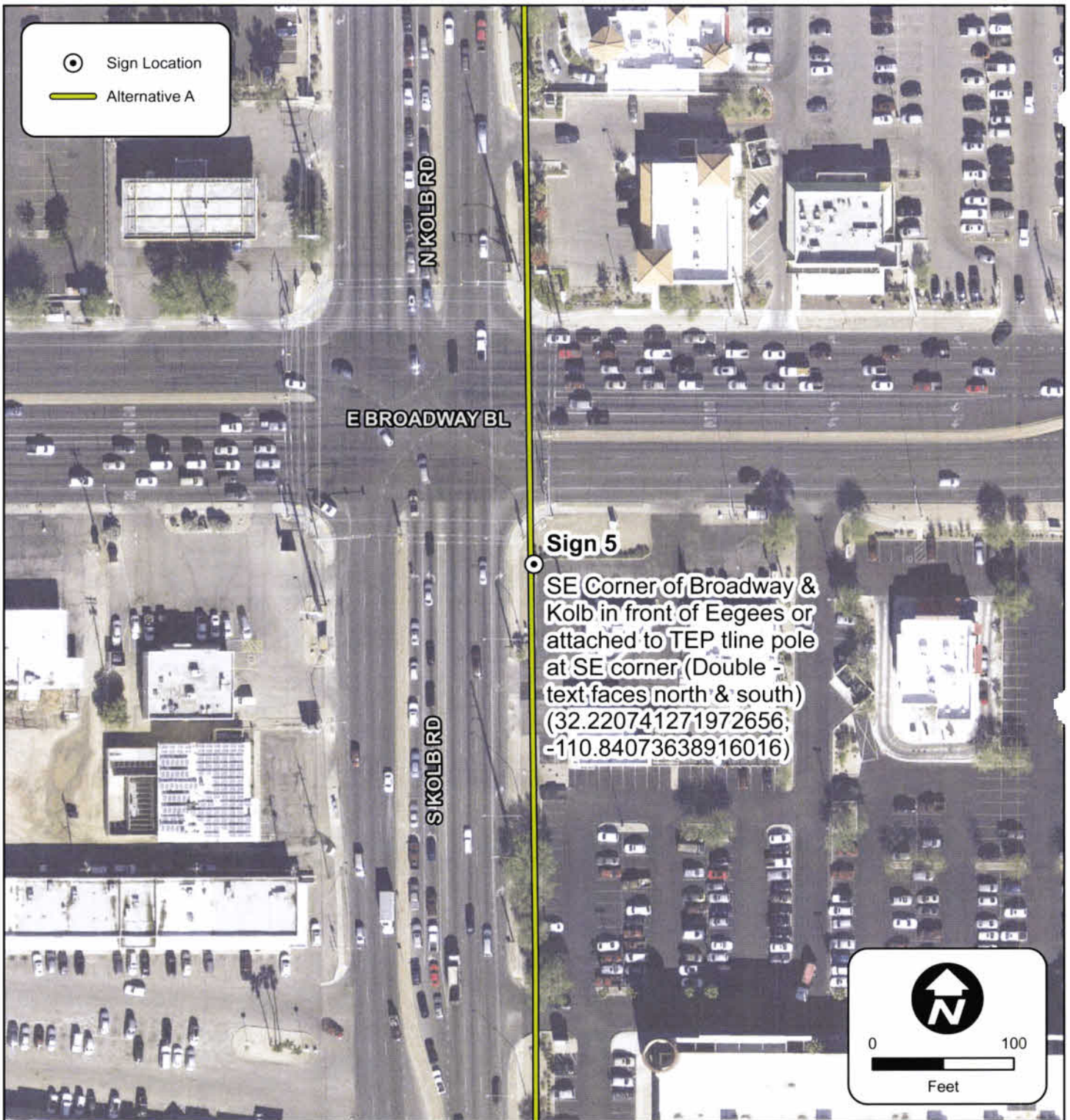
Proof of Posting Signage (Map 4 of 11)

TEP
 Tucson Electric Power
 Land Resources

Sources: Esri and UNS Energy.
 Projection: NAD 1983 UTM Zone 12N
 Basemap: PAG Imagery 2017

Note: Alternative C1 is an offset graphic representation to show common overlap alignments.

This map is for planning purposes only. TEP and UNS Energy make no warranty of its accuracy.



Irvington to East Loop 138 kV Transmission Line Project

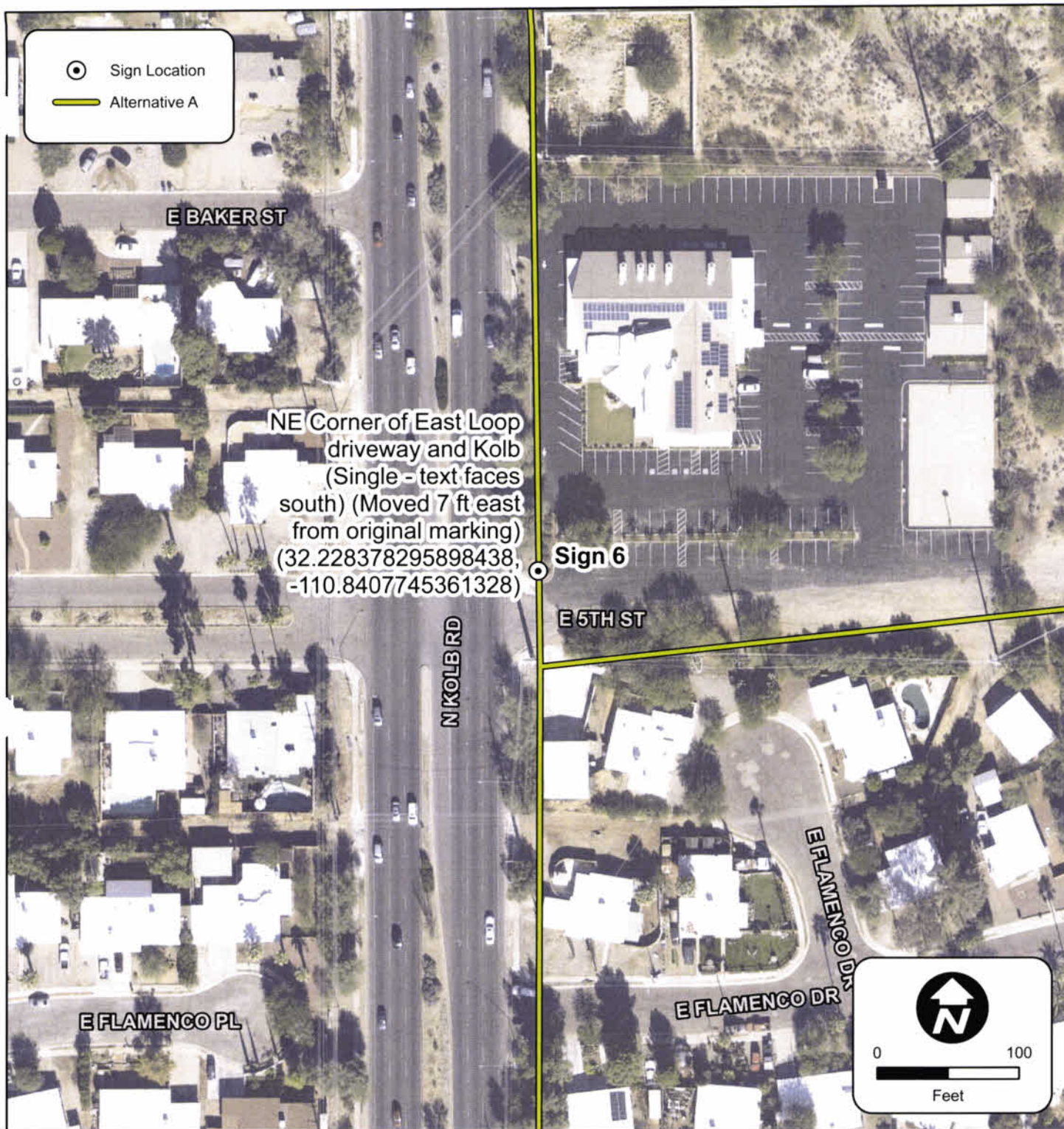
Proof of Posting Signage (Map 5 of 11)

TEP
Tucson Electric Power
Land Resources

Sources: Esri and UNS Energy.
Projection: NAD 1983 UTM Zone 12N
Basemap: PAG Imagery 2017

Note: Alternative C1 is an offset graphic representation to show common overlap alignments.

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Irvington to East Loop 138 kV Transmission Line Project

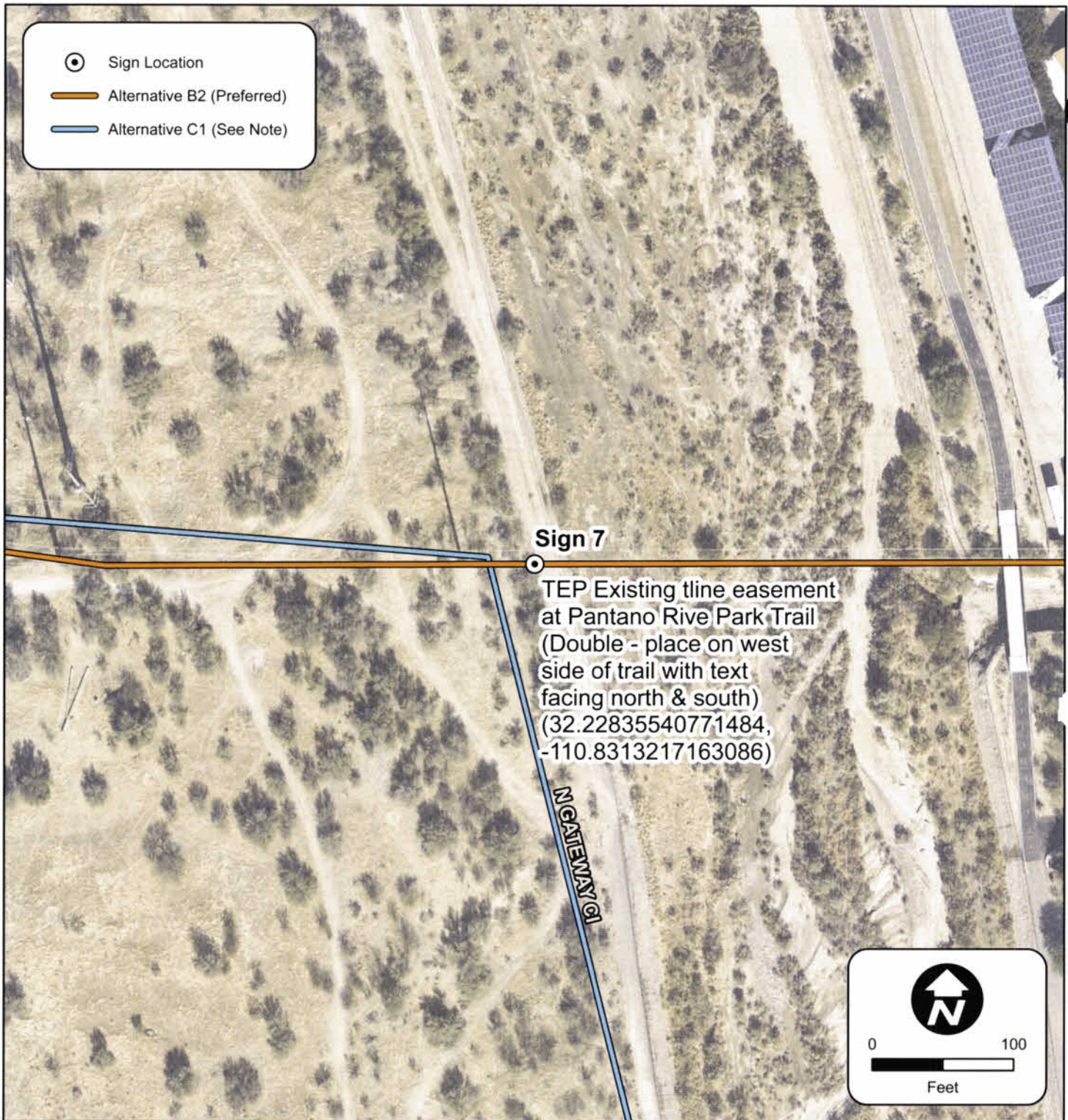
Proof of Posting Signage (Map 6 of 11)

Note: Alternative C1 is an offset graphic representation to show common overlap alignments.

TEP
Tucson Electric Power
Land Resources

Sources: Esri and UNS Energy.
Projection: NAD 1983 UTM Zone 12N
Basemap: PAG Imagery 2017

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Irvington to East Loop 138 kV Transmission Line Project

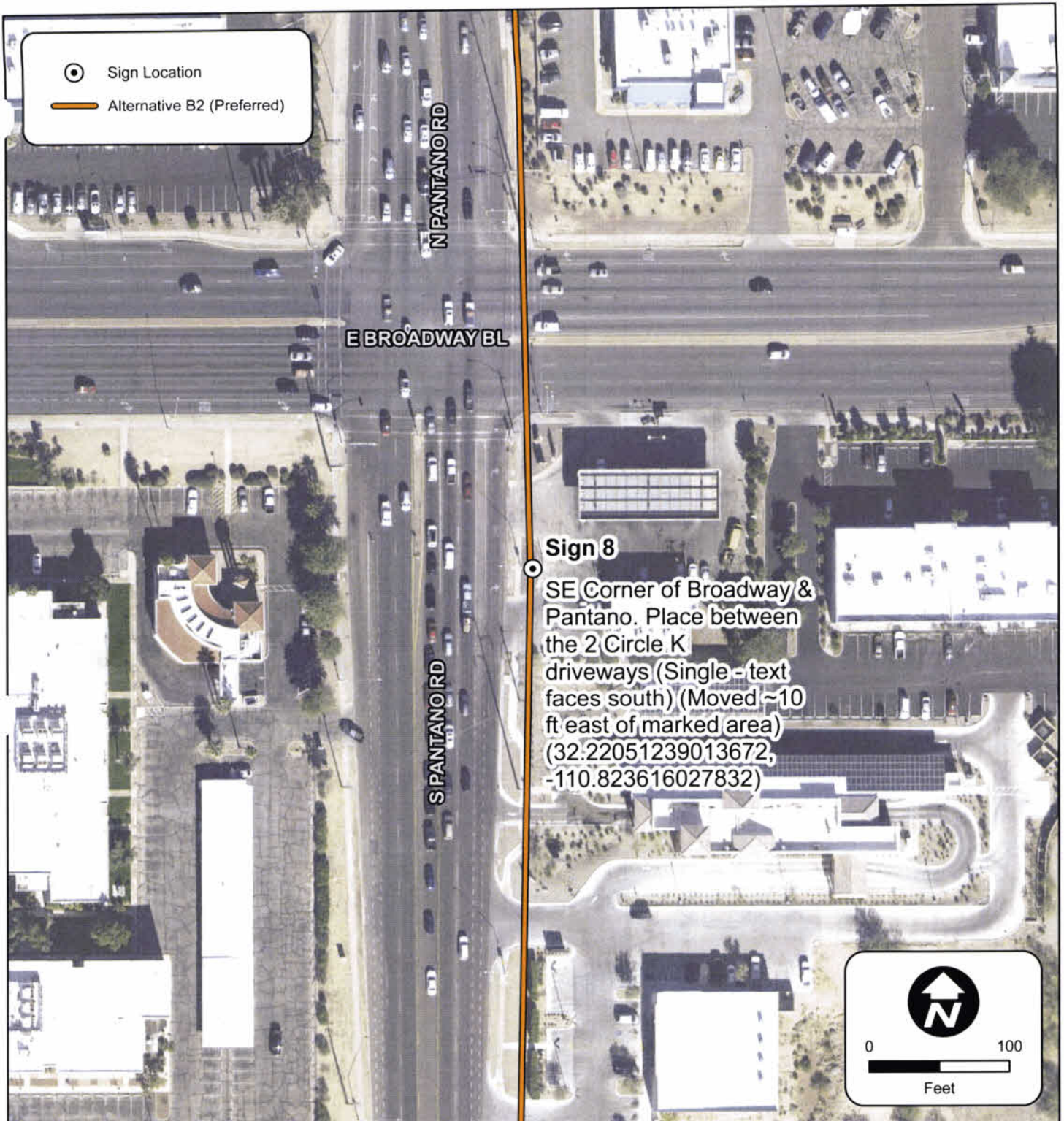
Proof of Posting Signage (Map 7 of 11)

TEP
Tucson Electric Power
Land Resources

Sources: Esri and UNS Energy.
Projection: NAD 1983 UTM Zone 12N
Basemap: PAG Imagery 2017

Note: Alternative C1 is an offset
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Irvington to East Loop 138 kV Transmission Line Project

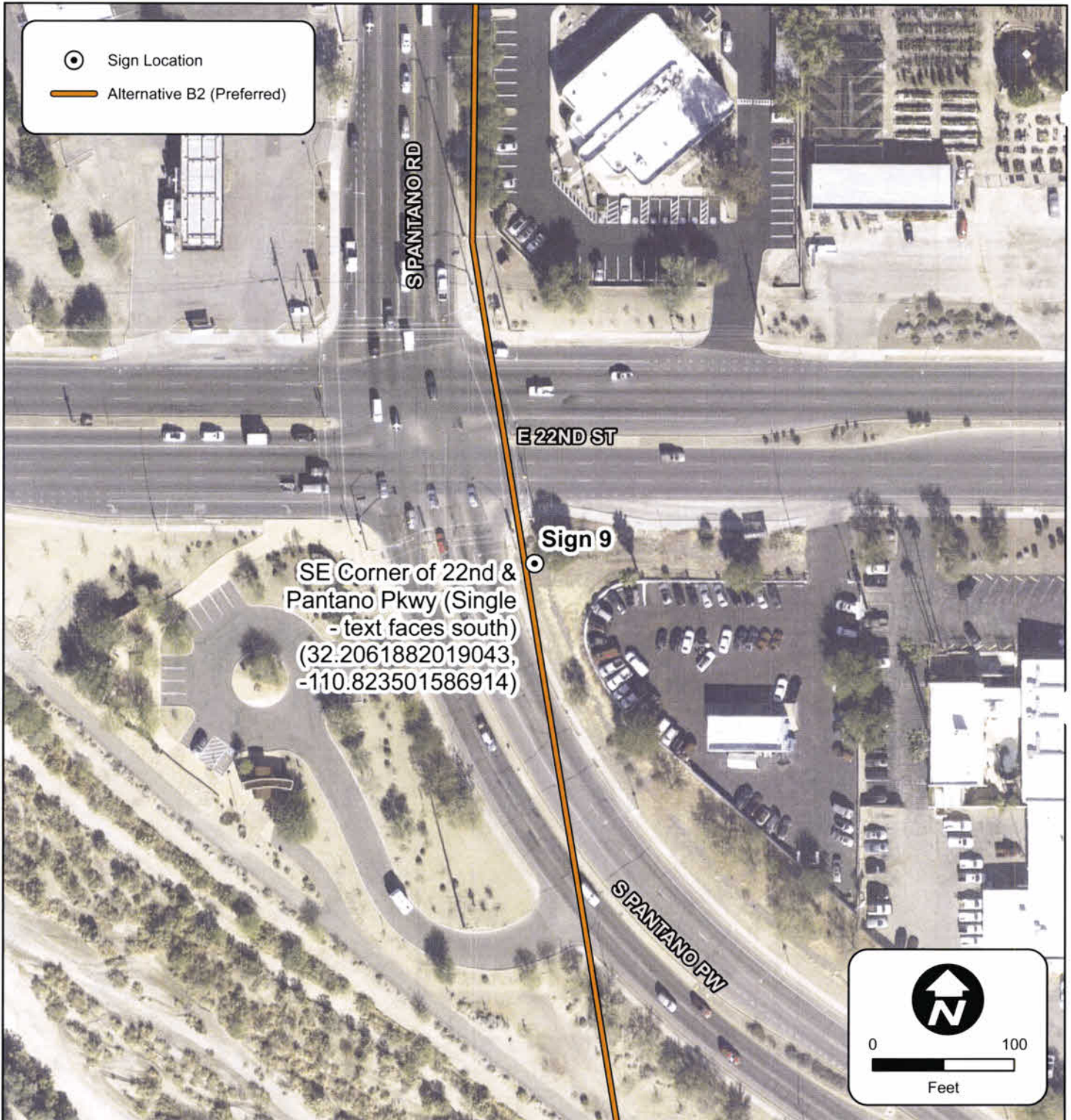
Proof of Posting Signage (Map 8 of 11)

TEP
Tucson Electric Power
Land Resources

Sources: Esri and UNS Energy.
Projection: NAD 1983 UTM Zone 12N
Basemap: PAG Imagery 2017

Note: Alternative C1 is an offset graphic representation to show common overlap alignments.

This map is for planning purposes only. TEP and UNS Energy make no warranty of its accuracy.



Irvington to East Loop 138 kV Transmission Line Project

Proof of Posting Signage (Map 9 of 11)

Note: Alternative C1 is an offset graphic representation to show common overlap alignments.

TEP
Tucson Electric Power
Land Resources

Sources: Esri and UNS Energy.
Projection: NAD 1983 UTM Zone 12N
Basemap: PAG Imagery 2017

This map is for planning purposes only. TEP and UNS Energy make no warranty of its accuracy.



Irvington to East Loop 138 kV Transmission Line Project

Proof of Posting Signage (Map 10 of 11)



Sources: Esri and UNS Energy.
 Projection: NAD 1983 UTM Zone 12N
 Basemap: PAG Imagery 2017

Note: Alternative C1 is an offset graphic representation to show common overlap alignments.

This map is for planning purposes only. TEP and UNS Energy make no warranty of its accuracy.



Irvington to East Loop 138 kV Transmission Line Project

Proof of Posting Signage (Map 11 of 11)



Sources: Esri and UNS Energy.
Projection: NAD 1983 UTM Zone 12N
Basemap: PAG Imagery 2017

Note: Alternative C1 is an offset graphic representation to show common overlap alignments.

This map is for planning purposes only. TEP and UNS Energy make no warranty of its accuracy.

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EXHIBIT TEP-8B
Hearing Notice Photographs

Irv-EL Notification Sign PHOTOGRAPHIC LOG


Site Location: Irvington to East Loop Project area	Photographer: Alex Utzinger	Date: 1/24/2020
Photo No. 1 Photo Description: Sign 1, from the sidewalk along the north side of Littletown Rd, looking northwest.		

Photo No. 2 Photo Description: Sign 2 looking north towards the intersection of Kolb and Valencia		
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Photo No. 3

Photo Description:
Sign 3 from the Aviation
Greenway path west of
the sign looking
northwest.



Photo No. 4

Photo Description:
Sign 4 from the south of
the sign looking north
towards the intersection
of Kolb and Golf Links



Photo No. 5

Photo Description:

Sign 5 from south of the sign looking north towards the intersection of Kolb and Broadway

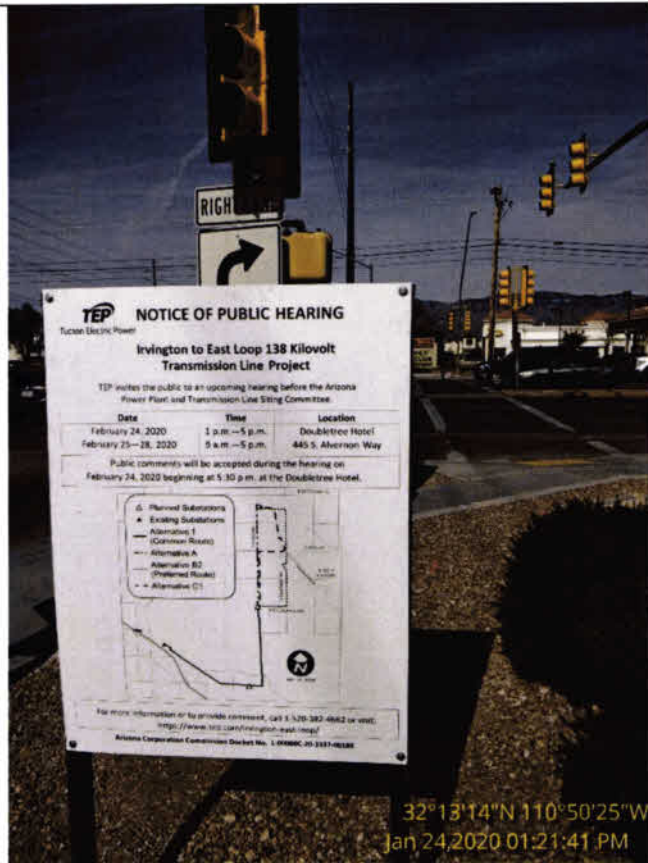


Photo No. 6

Photo Description:

Sign 6 from the south sidewalk looking north towards the Glad Tidings of God Church



Photo No. 7

Photo Description:

Sign 7 from north of the sign looking south down the Pantano wash trail.



Photo No. 8

Photo Description:

Sign 8 from the southern driveway of Circle K, looking northeast. Approx view while leaving or entering driveway, or approaching from south on Pantano



Photo No. 9

Photo Description:
Sign 9 From the south
of the sign looking north
towards the intersection
of Pantano and 22nd
street.



Photo No. 10

Photo Description:
Sign 10 from the
sidewalk to the south
looking north towards
the sign.



Photo No. 11

Photo Description:
Sign 11 from the east of
the sign looking west
along Escalante Rd.



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EXHIBIT TEP-9
Proof of Service to Affected Jurisdictions

EXHIBIT TEP-9
Proof of Service to Affected Jurisdictions

Pursuant to Paragraph 3 of the Chairman's January 23, 2020 Procedural Order, the Notice of Hearing was sent via certified mail to the Affected Jurisdictions within the meaning of A.R.S. § 40-360.04(A) on January 21, 2020.

CERTIFIED MAIL RECEIPT FOR CITY OF TUCSON

7015 0920 0001 4847 2581

**U.S. Postal Service™
CERTIFIED MAIL® RECEIPT**
Domestic Mail Only

For delivery information, visit our website at: www.usps.com

OFFICIAL USE

Postage \$
Certified Fee \$
Return Receipt Fee (Enclosure Required)
Restricted Delivery Fee (Enclosure Required)
Total Postage & Fees \$61.80

Sent To
Michael Ortega
City Hall Manager's Office
255 W Alameda
Tucson, AZ 85701

PS Form 3811, July 2014 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

■ Complete items 1, 2, and 3.
■ Print your name and address on the reverse so that we can return the card to you.
■ Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Michael Ortega
City Hall Manager's Office
255 W. Alameda
Tucson, AZ 85701

2. Article Number (Transfer from service label)
7015 0920 0001 4847 2581

COMPLETE THIS SECTION ON DELIVERY

A. Signature
B. Received by (Printed Name)
C. Date of Delivery
1-23-20

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No


3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Restricted Delivery

☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☒ Return Receipt for Merchandise
☐ Signature Confirmation®
☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

CERTIFIED MAIL RECEIPT FOR PIMA COUNTY

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT <i>Domestic Mail Only</i>	
For delivery information, visit our website at www.usps.com ®	
OFFICIAL USE	
Postage \$	
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees \$	
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Chuck Huckelberry Pima County Admin. Office 130 W Congress St., 10th Fl. Tucson, AZ 85701	
PS Form 3800, July 2014	

SENDER, COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<p><input checked="" type="checkbox"/> Complete items 1, 2, and 3.</p> <p><input checked="" type="checkbox"/> Print your name and address on the reverse so that we can return the card to you.</p> <p><input checked="" type="checkbox"/> Attach this card to the back of the mailpiece, or on the front if space permits.</p> <p>1. Article Addressed to:</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>Chuck Huckelberry Pina County Admin. Office 130 W. Congress St., 10th Fl. Tucson, AZ 85701</p> </div> <div style="text-align: center;">  <p>9590 9402 3147 7166 6801 13</p> </div> <p>2. Article Number (Transfer from service label)</p> <p style="font-size: 1.2em;">7015 0920 0001 4847 2611</p>	<p>A. Signature</p> <p><input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name)</p> <p>C. Date of Delivery 1-25-00</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes if YES, enter delivery address below: <input checked="" type="checkbox"/> No</p>
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EXHIBIT TEP-10

Post card mailed on February 4, 2020

EXHIBIT TEP-10

Post card mailed on February 4, 2020

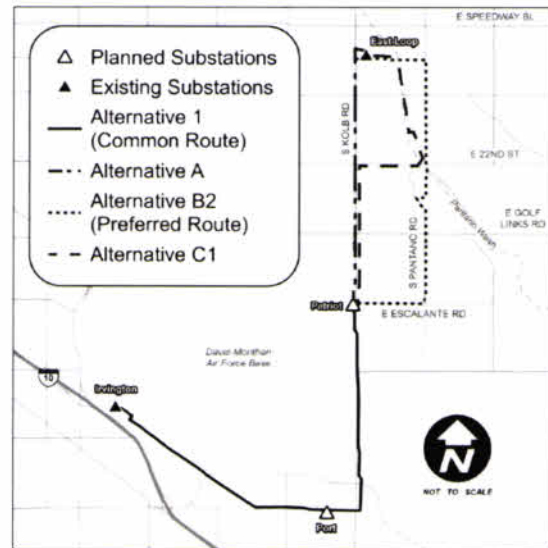
Irvington-East Loop Transmission Line Project – Public Hearing

Tucson Electric Power (TEP), in cooperation with community members and project stakeholders, has completed a siting analysis to identify three potential routes for a planned transmission line that will serve growing energy needs, help Davis-Monthan Air Force Base meet Department of Defense-mandated energy resiliency requirements and improve electric reliability for customers.

Under state law, TEP must secure a Certificate of Environmental Compatibility (CEC) from the Arizona Corporation Commission (ACC) before building the Irvington-East Loop 138 Kilovolt (kV) Transmission Line Project. The 11-13 mile line will connect TEP's existing Irvington and East Loop substations while interconnecting with TEP's planned Port and Patriot substations.

The Arizona Power Plant and Transmission Line Siting Committee will review TEP's CEC application at a public hearing beginning Monday, Feb. 24 at the Doubletree Hotel, 445 S. Alvernon Way in Tucson. A public comment session will be held on Feb. 24, beginning at 5:30 p.m. Public comments also can be submitted throughout the hearing at the committee chairman's discretion.

To view TEP's application and potential routes, read a public notice about the hearing or learn more about the project, visit tep.com/irvington-east-loop.



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EXHIBIT TEP-11

Applicant's Proposed Form of CEC

**BEFORE THE ARIZONA POWER PLANT
AND TRANSMISSION LINE SITING COMMITTEE**

In the matter of the Application of Tucson Electric Power Company, in conformance with the requirements of A.R.S. § 40-360, *et seq.*, for a Certificate of Environmental Compatibility authorizing the Irvington to East Loop 138 kilovolt (kV) Transmission Line Project, which includes the construction of new 138 kV transmission lines originating at the Irvington Substation (Section 03, Township 15 South, Range 14 East), with an interconnection at the Port Substation (Section 18, Township 15 South, Range 15 East) and the Patriot Substation (Section 31, Township 14 South, Range 15 East), and terminating at the East Loop Substation (Section 08, Township 14 South, Range 15 East), each located within Pima County, Arizona.

Docket No.
L-00000C-20-0007-00186

Case No. 186

CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

A. Introduction

Pursuant to notice given as provided by law, the Arizona Power Plant and Transmission Line Siting Committee ("Committee") held a public hearing on February 24 through February 28, 2020, in Tucson, Arizona, in conformance with the requirements of the Arizona Revised Statutes ("A.R.S.") §§ 40-360 *et seq.* for the purpose of receiving evidence and deliberating on the January 15, 2020 Application of Tucson Electric Power Company ("TEP" or "Applicant") for a Certificate of Environmental Compatibility ("Certificate") in the above-captioned case.

The following members and designees of members of the Committee were present at one or more of the hearing days for the evidentiary presentations, public comment, and/or the deliberations:

Thomas Chenal	Chairman, Designee for Arizona Attorney General Mark Brnovich
Leonard C. Drago	Designee for Director, Arizona Department of Environmental Quality
John R. Riggins	Designee for Director, Arizona Department of Water Resources
Laurie A. Woodall	Designee of the Chairman, Arizona Corporation Commission ("Commission")
Karl Gentles	Appointed Member, representing the general public
Jack Haenichen	Appointed Member, representing the general public
Patricia A. Noland	Appointed Member, representing the general public
Mary Hamway	Appointed Member, representing the incorporated cities and towns
James A. Palmer	Appointed Member, representing agriculture

The Applicant was represented by J. Matthew Derstine, Snell & Wilmer and Megan J. DeCorse of TEP.

At the conclusion of the hearings, the Committee, after considering the (i) Application, (ii) evidence, testimony, and exhibits presented by the Applicant, and (iii) comments of the public, and being advised of the legal requirements of A.R.S. §§ 40-360 through 40-360.13, upon motion duly made and seconded, voted **to** to grant/deny TEP, its successors and assigns, this Certificate for construction of the Irvington to East Loop 138 kilovolt ("kV") Transmission Line Project ("Project") as described below.

B. Overview of the Project

The Project will be located in the City of Tucson and Pima County, and entails the construction of __ miles of new 138 kV transmission line that will be constructed on a mixture of weathering tubular steel tangent and deadend monopoles.

1 The Project will enhance TEP's ability to respond to future load growth, provide
2 contingency support to existing distribution substations, assist Davis-Monthan Air Force Base
3 ("DMAFB") in fulfilling the Department of Defense ("DOD") directive for enhancing energy
4 resiliency, and over time allow replacement of part of the existing aging 46 kV system serving the
5 area. The existing electrical infrastructure does not provide sufficient capacity to serve future load
6 growth, and needs to be enhanced to provide DMAFB the resiliency it needs in order to fulfill the
7 DOD directive.

8 **C. Project Description and Alignment**

9 The new transmission line will begin at the Irvington 138 kV Substation, located at 3950
10 East Irvington Road, Tucson, Arizona, and extend east and north to connect to the East Loop
11 Substation located at 7201 East 5th Street in Tucson, Arizona. The Project will interconnect to the
12 planned Port and Patriot 138 kV Substations, to be located on 10 acres and 16 acres respectively
13 in Tucson, Arizona. The route will cross private, City of Tucson, Pima County, Arizona State and,
14 and DOD owned land as well as City of Tucson and Pima County road rights-of-way.

15 A map and description of the approved corridor is attached as Exhibit A.

16 **CONDITIONS**

17 [Unless otherwise noted, all conditions are adopted from the Certificate of Environmental
18 Compatibility approved in Case No. 184]

19 This Certificate is granted upon the following conditions:

20 1. This authorization to construct the Project shall expire ten (10) years from the date
21 this Certificate is approved by the Arizona Corporation Commission, with or without modification.
22 Construction of the Project shall be complete, such that the Project is in-service within this ten-

1 year timeframe. However, prior to the expiration of the time period, TEP may request that the
2 Commission extend the time limitation.

3 2. In the event that the Project requires an extension of the term(s) of this Certificate
4 prior to completion of construction, TEP shall file such time extension request at least one hundred
5 eighty (180) days prior to the expiration of the Certificate. TEP shall use reasonable means to
6 promptly notify all cities and towns within a five (5) mile radius of the Project and all landowners
7 and residents within a one (1) mile radius of the Project, all persons who made public comment at
8 this proceeding who provided a mailing or email address, and all parties to this proceeding. The
9 notification provided will include the request and the date, time, and place of the hearing or open
10 meeting during which the Commission will consider the request for extension. Notification shall
11 be no more than three (3) business days after TEP is made aware of the hearing date or the open
12 meeting date.

13 3. During the development, construction, operation, maintenance and reclamation of
14 the Project, TEP shall comply with all existing applicable air and water pollution control standards
15 and regulations, and with all existing applicable statutes, ordinances, master plans and regulations
16 of any governmental entity having jurisdiction, including, but not limited to, the United States of
17 America, the State of Arizona, Pima County, the City of Tucson, and their agencies or
18 subdivisions, including but not limited to the following:

- 19 a. All applicable land use regulations;
- 20 b. All applicable zoning stipulations and conditions, including but not limited to
- 21 landscaping and dust control requirements;

1 c. All applicable water use, discharge and/or disposal requirements of the Arizona
2 Department of Water Resources and the Arizona Department of Environmental
3 Quality;

4 d. All applicable noise control standards; and

5 e. All applicable regulations governing storage and handling of hazardous chemicals
6 and petroleum products.

7 4. TEP shall obtain all approvals and permits necessary to construct, operate and
8 maintain the Project required by any government entity having jurisdiction including, but not
9 limited to, the United States of America, the State of Arizona, Pima County, and the City of
10 Tucson.

11 5. TEP shall comply with the Arizona Game and Fish Department ("AGFD")
12 guidelines for handling protected animal species, should any be encountered during construction
13 and operation of the Project, and shall consult with AGFD as necessary on other issues concerning
14 wildlife.

15 6. TEP shall design the Project to incorporate reasonable measures to minimize
16 impacts to avian species. Such measures will be accomplished through compliance with the 2006
17 standards of the Avian Power Line Interaction Committee, and include the application of the
18 recommended measures to minimize the risk of collision, as described in the 2012 guidelines of
19 the Avian Power Line Interaction Committee.

20 7. The Applicant shall consult with the State Historical Preservation Office
21 ("SHPO"), City of Tucson and Pima County with respect to cultural resources. If any
22 archaeological, paleontological, or historical site or a significant object is discovered on state,
23 county or municipal land during the construction or operation of the Project, the Applicant or its

1 representative in charge shall promptly report the discovery to the Director of the Arizona State
2 Museum ("ASM"), and in consultation with the Director, shall immediately take all reasonable
3 steps to secure and maintain the preservation of the discovery, as required by A.R.S. § 41-844.

4 8. TEP shall comply with the notice and salvage requirements of the Arizona Native
5 Plant Law (A.R.S. §§ 3-901 *et seq.*) and shall, to the extent feasible, minimize the destruction of
6 native plants during construction and operation of the Project.

7 9. TEP shall make every reasonable effort to promptly investigate, identify and
8 correct, on a case-specific basis, all complaints of interference with radio or television signals from
9 operation of the Project addressed in this Certificate and where such interference is caused by the
10 Project take reasonable measures to mitigate such interference. TEP shall maintain written records
11 for a period of five (5) years of all complaints of radio or television interference attributable to
12 operations, together with the corrective action taken in response to each complaint. All complaints
13 shall be recorded to include notation on the corrective action taken. Complaints not leading to a
14 specific action or for which there was no resolution shall be noted and explained. Upon request,
15 the written records shall be provided to the Staff of the Commission. TEP shall respond to
16 complaints and implement appropriate mitigation measures. In addition, the Project shall be
17 evaluated on a regular basis so that damaged insulators or other line materials that could cause
18 interference are repaired or replaced in a timely manner.

19 10. If human remains and/or funerary objects are encountered on private land during
20 the course of any ground-disturbing activities related to the construction or maintenance of the
21 Project, TEP shall cease work on the affected area of the Project and notify the Director of the
22 Arizona State Museum as required by A.R.S. § 41-865.

1 11. Within one hundred twenty (120) days of the Commission's decision approving
2 this Certificate, TEP shall post signs in or near public rights-of-way, to the extent authorized by
3 law, reasonably adjacent to the Project giving notice of the Project. Such signage shall be no
4 smaller than a roadway sign. The signs shall advise:

5 a. Future site of a TEP power line; and

6 b. A phone number and website for public information regarding the Project.

7 Such signs shall be inspected at least once annually and, if necessary, be repaired or replaced, and
8 removed at the completion of construction.

9 12. At least ninety (90) days before construction commences on the Project, TEP shall
10 provide cities and towns within five (5) miles of the Project, Pima County and known builders and
11 developers who are building upon or developing land within one (1) mile of the Project with a
12 written description, including height and width measurements of all structure types, of the Project.
13 The written description shall identify the location of the Project and contain a pictorial depiction
14 of the facilities being constructed. TEP shall also encourage the developers and builders to include
15 this information in their disclosure statements.

16 13. TEP shall use non-specular conductor for the new circuit and non-reflective
17 surfaces for the transmission line structures on the Project.

18 14. TEP shall be responsible for arranging that all field personnel involved in the
19 Project receive training as to proper ingress, egress, and on-site working protocol for
20 environmentally sensitive areas and activities. Contractors employing such field personnel shall
21 maintain records documenting that the personnel have received such training.

22 15. TEP shall follow the most current Western Electricity Coordinating Council
23 ("WECC") and North American Electric Reliability Corporation ("NERC") planning standards,

1 as approved by the Federal Energy Regulatory Commission ("FERC"), National Electrical Safety
2 Code ("NESC") construction standards, and Federal Aviation Administration ("FAA")
3 regulations.

4 16. TEP shall participate in good faith in state and regional transmission study forums
5 to coordinate transmission expansion plans related to the Project and to resolve transmission
6 constraints in a timely manner.

7 17. When Project facilities are located parallel to and within one-hundred (100) feet of
8 any existing natural gas or hazardous liquid pipeline, TEP shall:

9 a. Ensure grounding and cathodic protection studies are performed to show that
10 the Project's location parallel to and within one-hundred (100) feet of such
11 pipeline results in no material adverse impacts to the pipeline or to public safety
12 when both the pipeline and the Project are in operation. TEP shall take
13 appropriate steps to ensure that any material adverse impacts are mitigated.
14 TEP shall provide to the Commission Staff and file with Docket Control, a copy
15 of the studies performed and additional mitigation, if any, that was implemented
16 as part of its annual compliance certification letter; and

17 b. Ensure that studies are performed simulating an outage of the Project that may
18 be caused by the collocation of the Project parallel to and within one-hundred
19 (100) feet of the existing natural gas or hazardous liquid pipeline. The studies
20 should either: i) show that such simulated outage does not result in customer
21 outages; or ii) include operating plans to minimize any resulting customer
22 outages. TEP shall provide a copy of the study results to the Commission Staff

1 and file them with Docket Control as part of its annual compliance certification
2 letter.

3 18. TEP shall submit a compliance certification letter annually, identifying progress
4 made with respect to each condition contained in this Certificate, including which conditions have
5 been met. The letter shall be submitted to Commission's Docket Control commencing on February
6 15, 2021. Attached to each certification letter shall be documentation explaining how compliance
7 with each condition was achieved. Copies of each letter, along with the corresponding
8 documentation, shall be submitted to the Arizona Attorney General's Office. With respect to the
9 Project, the requirement for the compliance letter shall expire on the date the Project is placed into
10 operation. Notification of such filing with Docket Control shall be made to the Board of
11 Supervisors for Pima County, the City of Tucson, all parties to this Docket, and all parties who
12 made a limited appearance in this Docket.

13 19. TEP shall provide a copy of this Certificate to the Board of Supervisors for Pima
14 County and the City of Tucson.

15 20. Any transfer or assignment of this Certificate shall require the assignee or successor
16 to assume, in writing, all responsibilities of TEP listed in this Certificate and its conditions as
17 required by A.R.S. § 40-360.08(A) and R14-3-213(F) of the Arizona Administrative Code.

18 21. In the event TEP, its assignee, or successor, seeks to modify the Certificate terms
19 at the Commission, it shall provide copies of such request to the Board of Supervisors for Pima
20 County, the City of Tucson, all parties to this Docket, and all parties who made a limited
21 appearance in this Docket.

22 ~~22. The Applicant will have the discretion to determine the orientation of the facilities~~
23 ~~on the Property other than the switchyard, which is depicted in Exhibit A, consistent with its~~

1 ~~electrical and operation needs and customer needs, subject to the development of the Property~~
2 ~~consistent with the City of Mesa Site Planning, Design Review and Permitting processes.~~ [Not
3 applicable to this case]

4 23. ~~The Applicant shall construct a ten (10) foot wall along the north and east side of~~
5 ~~the switchyard and otherwise mitigate the visual impact of the switchyard and other facilities on~~
6 ~~the Property. In developing the mitigation plan, the Applicant and the City shall consider the~~
7 ~~development in the area and security on the Property.~~ [Not applicable to this case]

8 24. The Certificate Conditions shall be binding on TEP's successors, assignee(s) and
9 transferees and any affiliates, agents, or lessees of TEP who have a contractual relationship with
10 TEP concerning the construction, operation, maintenance or reclamation of the Project. TEP shall
11 provide in any agreement(s) or lease(s) pertaining to the Project that the contracting parties and/or
12 lessee(s) shall be responsible for compliance with the Conditions set forth herein, and TEP's
13 responsibilities with respect to compliance with such Conditions shall not cease or be abated by
14 reason of the fact that TEP is not in control of or responsible for operation and maintenance of the
15 Project facilities.

16 **FINDINGS OF FACT AND CONCLUSIONS OF LAW**

17 This Certificate incorporates the following Findings of Fact and Conclusions of Law:

18 1. The Applicant made reasonable efforts to work with landowners to minimize the
19 impact of the facilities.

20 2. The conditions placed on the Project in this Certificate effectively minimize the
21 Project's impact on the environment and ecology of the state.

22 3. The conditions placed on the Project in this Certificate resolve matters concerning
23 balancing the need for the Project with the Project's impact on the environment and ecology of the

1 state arising during the course of the proceedings and, as such, serve as findings and conclusions
2 on such matters.

3 4. The Project is in the public interest because the Project's contribution to meeting
4 the need for an adequate, economical and reliable supply of electric power outweighs the
5 minimized impact of the Project on the environment and ecology of the state.

6 DATED this _____ day of _____ 2020.

7
8
9 THE ARIZONA POWER PLANT AND
10 TRANSMISSION LINE SITING COMMITTEE
11

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13 By: _____

14 Thomas K. Chenal, Chairman
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EXHIBIT A

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EXHIBIT TEP-12

Updated Application Exhibit G-5, Page 179

Key Observation Point (KOP) #1



Current Condition



Simulated Condition

Alternative 1

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EXHIBIT TEP-13

Updated Application Exhibit 1, Page 232

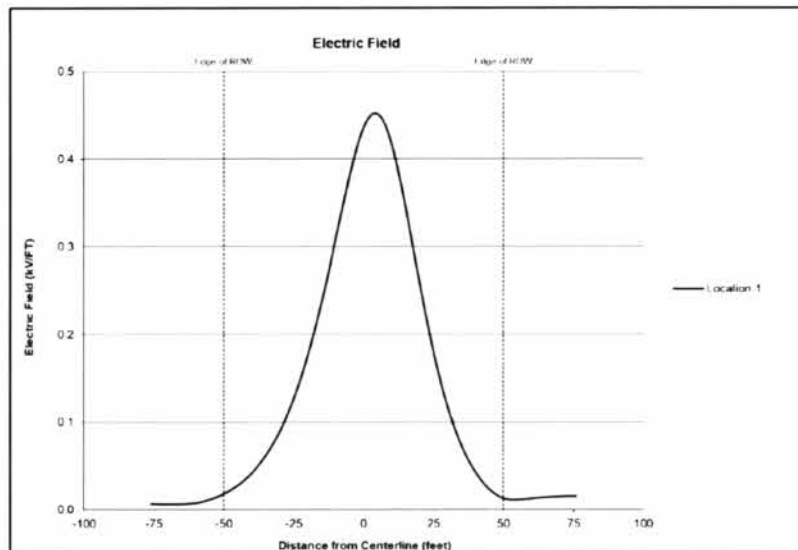


Figure 3. Electric Field at Distance from Centerline

I.5 References

IEEE/ANSI Standard C2-2007. National Electrical Safety Code.

National Academy of Sciences, 1977. Guidelines for Preparing Environmental Impact Statements on Noise. Washington D.C.

National Academy of Sciences, 1996. Possible Health Effects of Exposure to Residential Electric and Magnetic Fields. National Research Council.

National Institute of Environmental Health Sciences, 1999. Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields.

Newborhood 2019. Population Density/Tucson, Arizona. <https://www.newborhood.com/moving-guide/population-density/AZ/tucson>. November, 2019.

POWER Engineers, 2019. Tucson Electric Power, Irvington – East Loop EMF Analysis, Revision A. November 26, 2019.

Sound Solutions, LLC, 2017. Noise Review, Kolb Road; Sabino Canyon Rd to Sunrise Dr, Tucson Arizona. August 2017.

Tucson International Airport. 2017. Public Airport Disclosure Map. Tucson, AZ.

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EXHIBIT TEP-14

Updated Application Exhibit I-2, Page 235

November 26, 2019

TUCSON ELECTRIC POWER

Irvington – East Loop Transmission Line *EMF Analysis*

Revision 0

PROJECT NUMBER:
161294

PROJECT CONTACT:
ROB SCHAEERER, P.E.
EMAIL:
ROB.SCHAEERER@POWERENG.COM
PHONE:
(858) 810-5337



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EXHIBIT TEP-15

Letter from Michael M. Grant to Carol Peters
of Arizona Electric Power Cooperative, dated May 10, 1994

JOHNSTON MAYNARD
GRANT AND PARKER
P.L.C.

ATTORNEYS AT LAW

1200 NORTH CENTRAL AVENUE, SUITE 2300
PHOENIX, ARIZONA 85012



MICHAEL M. GRANT

May 10, 1994

DIRECT NUMBER

(602) 279-8517

Ms. Carol Peters
AEPCO
P.O. Box 670
Benson, Arizona 85602

Re: Substation for Sanchez Mining

Dear Carol:

As we've discussed, AEPCO proposes to construct a substation to serve the Sanchez Mining load. Temporarily, a short tap (involving less than three tower structures) would be dropped off the existing Greenlee-Dos Condados line and a substation would be built. Later, it's possible that the existing line will be moved, but for now all that is contemplated is the construction of a new substation erected without "a series of new structures." A.R.S. § 40-360(9). Please let me know if I've misunderstood any of these facts since our conclusions are specifically based on them.

The issue is whether a Certificate of Environmental Compatibility must be obtained in these circumstances from the Power Plant and Transmission Line Siting Committee ("Committee"). We think not. First, a substation is not a "switchyard" as that term is used in A.R.S. § 40-360(9). Secondly, even if it could be argued that a substation is similar to or included within the term "switchyard," no "series of new (transmission) structures" is being constructed "to be used therewith and related thereto..."

I discussed this conclusion recently with Tom Parish of Arizona Public Service. Mr. Parish was involved in the drafting and passage of the Committee statutes some twenty years ago. Mr. Parish agreed with this conclusion and stated the term "switchyard" was specifically chosen at that time so as not to include substation construction in Committee jurisdiction.

Finally, I discussed these facts and conclusions with Assistant Attorney General Charles Pierson, the Chairman-designee of the Committee, this morning. He agreed a certificate was not necessary under these circumstances and the Committee would not have jurisdiction.

COPY: S. GRIM
J. LODZINSKI
L. HUFF
M. SAUNDERS
B. WELLS
M. SCHWITZ

AEPCO ENGINEERING	
NAME	RT/CC
A. GRIM	
C. HUFF	
J. LODZINSKI	
L. HUFF	
M. SAUNDERS	
B. WELLS	
M. SCHWITZ	
J. GRANT	
C. PARKER	
L. HUFF	
J. LODZINSKI	
M. SAUNDERS	
B. WELLS	
M. SCHWITZ	
J. GRANT	
C. PARKER	
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Ms. Carol Peters
May 10, 1994
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Should you have any questions or if I've misunderstood any facts, please call.

Very truly yours,



Michael M. Grant
For the Firm

MMG/kgb

cc: Robert Hewlett, Esq.

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